PB-229 111

ALABAMA RIVER BASIN (INCLUDING THE COOSA, TALLAPOOSA AND CAHABA RIVER BASINS)

Public Health Service
Atlanta, Georgia

January 1954

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U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

PB 229 111

Water Pollution Series, No. 59

REPORT ON WATER POLLUTION CONTROL

ALABAMA RIVER BASIN

(Including The COOSA, TALLAPOOSA and CAHABA RIVER BASINS)

January 1954

Prepared by

U.S. Department of
Health, Education, and Welfare
Public Health Service
Southeast Drainage Basins Office

in cooperation with

Alabama Water Improvement Advisory Commission
Tennessee Stream Pollution Control Board

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INTRODUCTION

The Federal Water Pollution Control Act, Public Law 845, passed by the 80th Congress in June 1948, requires the Surgeon General of the Public Health Service to cooperate with other Federal Agencies, with State and interstate water pollution control agencies and with municipalities and industries in the preparation or adaption of comprehensive programs for eliminating or reducing the pollution of interstate waters and tributaries thereof, and improving the sanitary condition of surface and underground waters.

In developing these programs, due regard must be given to improvements necessary to conserve the Nation's waters for public water supplies, propagation of fish and aquatic life, recreational purposes, agricultural, and other legitimate uses.

Recognizing the fact that full technical information was not available to permit the development of such comprehensive programs immediately for most of the Nation's waters, the Public Health Service envisioned the development of a series of reports to cover the interim period prior to the development of comprehensive water pollution control programs. The first of these reports were the Summary Reports which were prepared for the 15 major drainage basins of the country on the basis of information readily available as of July 1, 1950. The second group of reports of this series, of which this is one, are reports on several sub-basins of the country's major drainage basin areas. Since the development of comprehensive water pollution control is to proceed as rapidly as conditions permit, only a limited number of these interim sub-basin reports are to be completed, and the majority of these will be for interstate sub-basin areas. This report is based on data available as of November 1, 1953, and will provide a reference point for measuring progress and serve to inform the public on the water pollution control problem and needs for the sub-basin concerned.

This report is based on data which have been compiled through and in cooperation with State water pollution control agencies, but should not be considered a detailed engineering investigation of the Alabama River Basin. Through these cooperating agencies additional data have been obtained from other State officials, county and city officials and representatives of industry. Federal agencies also have been of great assistance.

These reports present information about the ways the water resources of the area are used, the pollution entering these water resources and the resulting damages, the benefits which may result from pollution prevention and abatement, pollution prevention measures now in effect, and those which appear to be needed.

Since this report is based on data which are presently available, no attempt has been made to determine the future best uses of the water resources of the Basin as related to pollution control. Such water use determinations are dependent upon the development of a long range comprehensive program.

The deficiencies in data and the gaps in information indicated in this report are as significant as the presentation of available facts and statistics. They indicate the work that still needs to be accomplished by water pollution control authorities for the preparation of a comprehensive program.

Data and knowledge now available are sufficient, however, to permit the immediate solution of many of the pollution problems within the Alabama River Basin without awaiting additional surveys and studies.

A sincere effort has been made by all who contributed to this report to present a fair picture of the complex water pollution problems in the Basin and to present reasonable conclusions and recommendations. It is our hope that this report, as a step in the cooperative development of an ultimate comprehensive water pollution control program, will help in safe-guarding the water resources of the Alabama River Basin.

ACKNOWLEDGMENTS

The Public Health Service wishes to express its appreciation to those agencies and individuals that supplied information upon which this report is based, reviewed the preliminary draft, and submitted helpful comments.

The following water pollution control agencies have furnished data from which various tables on pollution were prepared and other data and information contained in the narrative portion of the report:

Alabama Water Improvement Advisory Commission
Georgia Department of Public Health
Tennessee Department of Public Health

In general, the report has been revised so that it is in agreement with the comments and suggestions of the State Agencies.

Federal agencies from which assistance was obtained include: Corps of Engineers, Department of the Army; Geological Survey, Fish and Wildlife Service, and National Parks Service, Department of Interior, Bureau of Census, Department of Commerce; Soil Conservation Service, Department of Agriculture; and Federal Power Commission.

There is also acknowledged the assistance of other State agencies and individuals interested in water resources development and conservation, that have contributed information.

SUMMARY

The Alabama River, which ranks twelfth largest in the United States in volume of flow, drains an area of 22,652, square miles. The area includes 17,239 square miles in Alabama, 5,297 in Georgia and 116 square miles in Tennessee. Its headwaters rise in the Blue Ridge Mountains of Tennessee and northwestern Georgia at an elevation of 2,400 feet. The tributaries flow through the steep narrow valleys of the southern Appalachian Mountains to the plateau area. The streams continue on through low hills and broad, fertile valleys to the Coastal Plain. The Coastal Plain comprises the lower third of the basin. The Alabama River combines with the Lower Tombigbee River to form the Mobile River at a point 45 miles above Mobile Bay.

The 1950 basin population of 1,293,178 is an 8 percent increase over the 1940 population figure. There are 39 urban communities of more than 2,500 population, which contain 34 percent of the population. Montgomery, the largest urban center has a population of 106,525.

The economy of the basin has always been predominantly agricultural. In 1950 more than half of the land was used for agricultural pursuits. The estimated value of all farm products sold that year was $107,745,000. There has been a decrease in the number of farms and a gradual shifting from crop production to livestock and the production of forest products.

Industry is experiencing a rapid and extensive expansion at the present time especially in the paper and pulp, textile and food processing fields. Steel and iron mills centered principally in Gadsden and Anniston use coal and iron ore mined nearby. Chemical manufacturers include fertilizer plants and cotton-seed oil mills. Lumber and paper mills obtain their raw material from the forest lands of the basin. In spite of the recent industrial growth, this area is still not industrialized to any great extent.

The tourist business is rapidly becoming of considerable economic importance, however, no exact figures are available for the basin. Some recreation areas of local significance have been developed. Additional recreational facilities are needed to serve the people of the basin.

One of the greatest factors in the economic growth of the basin is its abundant water resources. They are adequate to sustain extensive industrial expansion, population growth, recreational development, and other legitimate uses provided they are guarded against pollution.

One hundred and twenty-eight municipal and industrial water supplies obtain water from both surface and underground sources. The 54 surface water supplies furnish 88 percent of the water requirements. It is estimated that more than 257 million gallons of water are used daily.

The Alabama River and its tributaries received discharges from 87 municipalities and 91 industries. The municipal sewerage systems serve a population of 405,495, about 31 percent of the estimated popula-

tion of the basin. The Alabama and Coosa Rivers receive most of the pollution. The wastes discharged from the Anniston, Alexander City, Childersburg, Gadsden, Montgomery, and Selma areas in Alabama and the Rome area in Georgia amount to approximately 84 percent of the total estimated amount of domestic and industrial pollution contributed to the stream. The receiving streams are affected for varying distances below the waste discharges depending on the ability of the stream to purify itself. Catoma Creek receives 65 percent of Montgomery's raw domestic sewage and some industrial wastes. It is grossly polluted to its junction with the Alabama River. Active planning is underway to correct this condition.

Of the 87 sewered municipalities, 54 provide some treatment of their wastes. There are 60 municipal sewage treatment plants serving a population of 128,585 or approximately 32 percent of the estimated sewered population. The other 33 sewered municipalities provide no treatment for their wastes.

The data are incomplete regarding adequacy of the existing treatment plants. The available information, however, indicates that only 19 municipal treatment facilities are of satisfactory capacity for their present loading. Only three of the 16 existing industrial waste treatment plants are reported to be satisfactory.

Construction of waste treatment facilities has not kept pace with the development of the area. Table L lists the reported municipal and industrial waste treatment needs as of November 1, 1953. Basic data on the sources of municipal and industrial pollution appear in Table 1 of the appendix.

The reported municipal waste treatment needs include: 16 new plants to serve a population of 121,600; enlargements or additions to 18 existing plants serving 45,550; and the replacement of two plants. The needs for 48 sewered communities with a total population of 188,900 are unreported or undetermined. The reported industrial waste treatment needs are one new plant and enlargements or additions to three existing plants. The city of Marion, Alabama is at present constructing waste treatment facilities.

Alabama has adequate water pollution control legislation. They have made detailed studies of the streams and are now checking the efficiency of existing waste treatment plants. This basic information is essential for the preparation of a comprehensive plan for the fullest and most economical use of the waters of the basin. The Alabama law authorized classification of its streams. The classification of the streams and the development of water quality objectives will be based on downstream water usage. Each case will be considered individually.

Additional data are needed before an estimate of the construction cost of all the treatment work necessary to abate pollution in the basin can be made. On the basis of reported municipal waste treatment needs only, approximately $7,500,000 would be required. This cost of construction could be financed by revenue bonds. The cost to the individual family would be about what they pay for the daily newspaper.

CONCLUSIONS

1. There is a well defined and definite transition from a predominantly agricultural economy to one of greater industrialization in the basin. The conservation development and protection of the water resources of the Alabama River Basin are of vital importance to the industrial and economic growth of the area.

2. The increased population growth and present rapid industrial development in the basin is resulting in greater and more varied use of water. To adequately protect the basin's water resources for future use, prompt action must be taken by both municipalities and industries to abate existing pollution as well as to insure adequate treatment facilities which will protect and conserve the streams for all water uses.

3. Considerable data are available on many sources of pollution, however, basin-wide information is incomplete. Needed corrective abatement measures have been determined for many sources of pollution in the Alabama River Basin based on presently available data.

4. The major causes of pollution in the basin are the wastes discharged from textile mills, municipalities, paper and pulp mills, and food processing plants. Silt resulting from erosion is also causing pollution affecting many water uses. Erosion problems are being progressively lessened by the systematic re-forestation and planting of cover crops and other agricultural methods for erosion control.

5. Further studies are needed to determine the volume and strength of sewage and waste from the various sources of pollution. Operation of existing municipalities and industrial waste treatment plants should be checked and improvements made where indicated.

6. Where the requirements for pollution abatement are known, those responsible for pollution should be provided with essential information for guidance in development of the necessary remedial measures.

7. Pollution abatement, flood control, soil conservation, and the development of water resources will encourage additional industrial expansion and result in improved environment beneficial to the public's health.

8. The effectiveness of a pollution control abatement program depends upon the good will of the people. There is a need for an informational program on water pollution control, advising those, who will bear the cost of construction, of the needed remedial works.

RECOMMENDATIONS

It is recommended that:

1. Surveys and investigations, providing complete data on sources of pollution, stream water quality, and water uses necessary to fill the present gaps in information on pollution sources and damages to water resources, be made as soon as practicable so that effective comprehensive programs may be formulated for the basin.

2. Positive action be taken by responsible authorities in accordance with the requirements of the States involved, to provide for the pollution abatement projects as listed in Table L.

3. Desirable water quality objectives be established for all water uses throughout the basin. These criteria should be the basis of abating existing pollution and should govern future industrial and municipal waste treatment planning.

4. Municipalities and industries alike recognize their individual and collective responsibility, in accordance with the requirements of their respective States to preserve the water resources. It is further recommended they initiate action to provide funds to finance needed pollution control projects.

5. Priority consideration be given toward abatement of nuisances created by pollution, municipal and/or industrial, from the major metropolitan areas which have no waste treatment facilities at present. These include Aniston-Oxford, Auburn, Clanton, Montevallo, Montgomery, Prattville, and Tuskegee, Alabama and Canton, Carrollton, Cartersville, and Rome, Georgia.

6. Increased funds for the additional needed personnel be provided by the States to their respective water pollution control agencies with adjustment of salaries compatible with their duties and responsibilities in carrying out comprehensive pollution abatement programs.

7. Local, State and Federal agencies cooperate to the fullest extent in making available to the public pertinent information and expanding public information programs relating to water pollution control and conservation of the water resources of the basin.

HISTORICAL BACKGROUND

The Alabama Drainage area was originally inhabited by tribes of the Creek and Cherokee Indian nations. The agricultural history of the region is reflected by the origin of the word "Alabama". The Choctaw Indian tribe which lived along the banks of the Alabama River called themselves the "alba amo", which meant "thicket clearers" or "plant gatherers". They and other tribes carried on a rude form of agriculture in the fertile soils of the Coastal Plain area. The white man's adaptation of the Indian dialect resulted in the one word, "Alabama".

Limited exploration of the region was carried on by the Spanish and French from the South, and by English traders from the Northeast. The Spanish led by Hernando De Soto, in 1539, were the first Europeans to explore the area. After their unsuccessful attempt at colonization, the Alabama territory remained unexplored for about a century and a half. English traders from the Carolinas penetrated into the Alabama River valley as early as 1687. In 1699 a French expedition under the French-Canadian explorer Sieur d' Iberville, explored the coasts of what is now Mississippi, Louisiana, and Alabama, and took possession in the name of the King of France. A settlement was established at Mobile in 1711 and Fort Toulouse, near Wetumpka, was built. First pioneers were mainly British sympathizers from Georgia who migrated during and after the Revolutionary War into the Alabama River Valley. First settlers in the northeastern part of the basin were from the highland states of the East.

The Alabama Territory was claimed by France until 1763, at which time it was ceded to the British, who in turn ceded it to the United States in 1783. Alabama was admitted to the union in 1819. At that time the capitol was located at Cahaba. In 1826 it was moved to Tuscaloosa, and in 1846 to Montgomery, the present location. Georgia was claimed by the British until after the Revolutionary War as a part of the original Carolina Grant made by Charles 1 in 1629. In 1802, the State sold all of its territory west of the Chattahoochee to the newly formed Federal Government for $1,250,000. After the region was opened for settlement, bloody Indian wars followed, until the Creeks were driven out in 1832 and the Cherokees were expelled in 1838.

The physical damage to the area during the Civil War was slight. During the years of reconstruction, however, the economy of the States was ruined and industrial development prevented. Until 1900 the economy was practically all agricultural. General industrial growth was experienced in the next 30 years, particularly in the Birmingham and Gadsden areas. The steel and coal in these regions furnished large amounts of defense materials during World Wars I and II. During and after World War II the industrial development, which had been concentrated largely near Birmingham and Gadsden, began to spread to other portions of the basin.

PHYSICAL DESCRIPTION

The Alabama River system drains an area of approximately 22,652 square miles. Its basin, approximately 350 miles in length averaging 60 to 70 miles in width includes 116 square miles in southeast Tennessee, 5,297 square miles in northwest Georgia and extends southwesterly through the central portion of Alabama terminating at the junction of the Alabama and Lower Tombigbee Rivers about 45 miles above Mobile, Alabama.

The principal tributaries are: the Etowah and Oostanaula Rivers which rise in the Blue Ridge Mountains of northwest Georgia and southeast Tennessee and join at Rome, Georgia to become the Coosa River; the Coosa River which flows 286 miles to its confluence with the Tallapoosa River, to form the Alabama River about fifteen miles above Montgomery, Alabama; and the Cahaba River which rises in north central Alabama and flows south approximately 196 miles to a junction with the Alabama River 17 miles below Selma, Alabama. The Alabama River flows approximately 32[illegible] river miles from the confluence of the Coosa and Tallapoosa Rivers to its junction with the Tombigbee River, 45 miles above Mobile Bay where they form the Mobile River.

The topography of the basin varies from the steep slopes and narrow canyon-like valleys of the southern Appalachian Mountains in the headwater areas through the broken hilly land which characterizes the central and upper portions of the basin to the flat or gently rolling coastal plains in the lower basin. The Fall Line, the boundary between the Piedmont Plateau and the Coastal Plain, separates the upper portion of the basin with its more rugged terrain, from the lower coastal plain portion. There are extensive areas of wooded swamps in the lower Alabama River flood plain where frequent flooding has prevented the clearing of lowland forest areas for agricultural use.

Soils are generally of mediocre quality, are easily eroded when cultivated intensively, and have been damaged by soil erosion under past use. They range in character from the red clay soils of the Piedmont Plateau and heavy dark clays of the black Prairie to the deep sands and sand-over-clay types on the flats and gentle slopes of the lower Coastal Plain. Most of the soils are strongly leached and are not highly fertile, but, except where there are unfavorable physical characteristics such as impermeable layers or steep slopes, they can be made productive through fertilization and good management. On sloping land erosion is generally a hazard unless the ground is well protected with sod, close growing crops or forest cover, and measures are used to control runoff.

The climate of the Alabama Basin is warm and moist, with mild winters and long, hot summers. The mean annual temperature varies from 60 degrees to 66 degrees Fahrenheit from the northern portion to the southern. The length of the frost-free season varies from 192 days in the northern valleys to 245 days in the southern part of the Basin.

Rainfall is abundant and well distributed throughout the year. The wettest months occur in the winter and early spring. The annual average rainfall varies from 55 to 60 inches. Snow falls occasionally especially in the headwater areas but the amounts are small. Thunderstorms are common but not often serious. Tornadoes are not uncommon during the spring months particularly in the south and central area. Draughts are usually brief and local in nature. Heavy rains occasionally cause floods in the bottom lands during the winter and early spring. Although some crops suffer damage from these floods, land is benefited by alluvial deposition.

Forests covered nearly the whole basin at one time; now about 60 percent of the land is forested. The forests are usually hardwood in the headwater area, pine in the southern portion with hardwood in the stream bottom, and pine hardwood elsewhere. Virutally all forest has been cut over at least once and what remains standing is second growth timber which varies widely in size, quality and volume of stand. Despite great reduction in forest resources, the rapid growth of many young stands has sustained a high output of timber products.

The Alabama River is twelfth largest in the United States with a mean discharge of 32,000 second-feet recorded at Claiborne over a seventeen-year period. The following table gives the flow characteristics of the principal streams in the Alabama River system.

Maximum discharges occur during the winter and early spring, a maximum of 227,000 second feet being recorded during the seventeen-year gauging period. A regulated minimum flow of 6,000 second feet is maintained at Montgomery by power projects on the Coosa and Tallapoosa Rivers. The second largest river in the system is the Coosa which has an average flow of 15,890 second feet as recorded by the U. S. Geological Survey gauge at Jordan Dam over a 23-year period. Maximum and minimum flows during this period were 298,000 and 54 second feet, respectively. Gauging records on the Tallapoosa and Cahaba Rivers are not as complete as those of the Alabama and Coosa Rivers. However, maximum and mimimum recorded flows on the Tallapoosa at Sturdevant, Alabama vary from 102,000 second feet to 25 second feet. On the Cahaba River at Centerville, Alabama, some 86 miles above its mouth, maximum and minimum discharges of 82,200 and 90 second feet have been recorded. Average annual runoff for the entire basin approximates 22 inches or about 40 percent.

FLOW CHARACTERISTICS OF PRINCIPAL STREAMS

Stream Station	Drainage Area Sq. Miles	Years of Record	Min. Daily Flow c.f.s.	Mean Flow (3 Mo. Low) 1937-1947 c.f.s.
Cartecay River				
Ellijay, Ga.	135	11	64	127
Coosawatte River				
Ellijay, Ga.	238	10	59	207
Pine Chapel, Ga.	856	10	220	507
Oostanaula River				
Resaca, Ga.	1,610	47	180	2,762
Rome, Ga.	2,157			
Etowah River				
Canton, Ga.	605	21	190	501
Kingston, Ga.	1,630	14	201	1,003
Rome, Ga.	1,810	9	500	862
Coosa River				
Below Rome, Ga.	4,050	14	870	2,109
Leesburg, Ala.	5,270	11	1,130	2,443
Gadsden, Ala.	5,800	22	1,170	2,645
Childersburg, Ala.	8,300	29	1,300	3,735
Jordan Dam, Ala.	10,200	24	a54	4,568
Little Tallapoosa R.				
Carrollton, Ga.	89	11	6	43
Wedowee, Ala.	848	9	53	248
Tallapoosa River				
Wadley, Ala.	1,660	25	60	815
Sturdevant, Ala.	2,460	26	25	
Tallassee, Ala.	3,320	20	a10	3,022
Cahaba River				
Centerville, Ala.	1,030	9	90	384
Marion Junction	1,780	9	323	751
Alabama River				
Montgomery, Ala.	15,100	21	a2,420	9,263
Selma, Ala.	17,000	33	a2,660	10,230
Miller's Ferry	20,700	11	a5,260	11,150
Claiborne, Ala.	22,000	18	a5,260	11,860

a Regulated

ECONOMIC DEVELOPMENT

There has been continuous development of the area with a gradual shifting of the population from rural to urban areas. The rural population (including all communities of less than 2,500 people) increased 4.6 percent during the period 1930 to 1940. The urban population increased 21.6 percent. In the next ten years the urban population increased 36 percent, but the rural population decreased 2.7 percent. The 1950 census report showed, however, that 66 percent of the basin's population still were in communities of less than 2,500 or lived in rural areas.

The estimated 1950 population for the area was 1,293,178. Municipalities showing the largest increase in population from 1940 to 1950 were principally in the Alabama portion of the basin. Montgomery, Anniston, Attalla, Gadsden, and Auburn in Alabama, also Dalton, Georgia increased 5,000 or more.

Manufacturing establishments in Alabama and Georgia employed an estimated 145,700 persons in 1951, while mining activities employed approximately 5,300. The number of non-agriculture workers employed in 1951 is approximately 5 percent more than those employed in 1950. The number of farm workers has been declining. In 1950 (the last available figures) there were approximately 126,500 farm workers in the basin. The number of manufacturing establishments has more than doubled between 1939 and 1949 while the number of production workers has increased more than one-third.

In 1940 per capita income payments in the southeast of which the Alabama Basin is a characteristic part were 56 percent of the national average of $575. By 1948 such payments had increased to 68 percent of the national average of $1,410. Industrial growth has contributed substantially to the relatively large increase in the per capita income. Despite these gains, the area is not yet industrialized to an extent comparable with many other regions of the United States. In most of the States of the Southeast manufacturing represents a smaller proportion of the total income than it does in other regions.

There is a wide variety of types of industry in the area. The textile and apparel industry employs an estimated 55 percent of the total industrial labor force. Other industries in order of the number of persons employed are the metal industries, food products, mining, rubber products, products of petroleum and oil and chemical industries. Abundant water resources, adequate labor supply, proximity of raw materials, and good transportation facilities are still attracting industry into the basin.

The agriculture activities of the basin are still an important part of its economy. The total number of farms have decreased but the average size of the farm has increased. There is a definite trend away from crop farming to livestock production.

There are six soil groups within the basin, all of which are tillable and capable of supporting profitable agriculture. The soils in the central portion of the basin are generally best suited for the production of field and truck crops. The principal field crops are cotton and corn, although increased acreages are being devoted to peanuts, soy beans, potatoes and other diversified crops. The general suitability of the soil of the basin to pasturage and cattle feed production plus usually mild winters make yearlong grazing common. Large areas which have been damaged by erosion have been converted to pasture land or reforested.

Extensive timber stands of both hard and soft woods supply the raw materials for saw mills, pulp mills and naval store plants. Much of the present forested region is second growth pulp wood providing material for the pulp and paper industries of the basin. The value of the wood products sold has increased about 270 percent in five years.

Irrigation is of little significance in the area. The abundant precipitation is depended upon to provide the required moisture for crop growth. Ample ground water furnishes most rural water supplies though surface sources are sometimes used for livestock watering.

A number of minerals, principally iron, coal and carbonate rocks are mined commercially in the area. The Warrior and Cahaba coal fields and Red Mountain near Birmingham supply most of the coal and iron ore in the State of Alabama. Some brown and red iron ore is also found in the Coosa Basin, and explorations are being conducted in the Shades Valley region east of Red Mountain which promises ore fields for future development. The principal limestone quarries are located in the Coosa Basin. Some granite and graphite are taken from the Tallapoosa Basin. There are deposits of barite, talc, asbestos, mica, clay lignite, gold and high grade silica sands. Some of these are commercially mined on a small scale.

The principal commercial fisheries exist in the Alabama River Basin. An estimated 250 commercial fishermen take approximately 200,000 pounds of catfish, 60,000 pounds of buffalo, 65,000 pounds of drum and 3,000 pounds of sturgeon from the Alabama River and its tributaries annually. Commercial fishing is very limited in the Coosa River and its tributaries being restricted chiefly to the taking of catfish for local consumption. There are, however, numerous fishing camps located on the impoundments in the upper area.

Upland game and fur bearing animals are found throughout the basin where natural habitats occur. Deer, Black Bear, wild turkey and ducks are most abundant in the lower portion of the basin. Sportsmen clubs have under lease an estimated 500,000 acres in the lower portion of the basin.

A large part of the Talladega National Forest extends into the basin area. There are six state parks. In addition to the five Alabama parks and the one in Georgia, a number of cities of both States operate organized community recreational facilities.

Transportation facilities of the basin are ample. Eight major railroads serve the area. There is also a fairly extensive system of surfaced roads both State and federal. The Alabama River is navigable from Wetumpka to Mobile, a distance of about 331 miles. The channel is rather shallow and river barge freight consists mainly of logs, pulp wood, sand and gravel. However, in the past river boats carried passengers from Mobile to Montgomery.

PRESENT AND FUTURE USES OF WATER RESOURCES

The network of rivers provided the first inhabitants with a means of communication, transportation, adequate water supply and fishing grounds. The use of the water resources has been gradually expanded and additional water uses have been added to those which satisfied the needs of the first inhabitants. The protection of the water resources is vital to the economic development of the area.

The major water use in the basin is domestic and industrial water supply. Table 1, "Water Supplies in the Alabama River Basin" lists the municipal, institutional, and industrial water supplies. In the upper part of the basin the major supplies are obtained from the surface waters, while in the lower part only ground water is used as a source of supply at the present time. Surface water is abundant, relatively soft and of good chemical quality. Though it is turbid, it can be treated satisfactorily for public use by conventional water treatment methods without undue expense. Ground water is available in all parts of the basin but is limited in the Piedmont Plateau area. Future major developments in the lower basin will require utilization of surface waters since the high demands have lowered the ground water level and created a water supply problem which will become serious if these sources continue to be developed.

There are 128 municipal and institutional water supplies serving a total of 963,550 persons, approximately 74 percent of the basin's population. Complete treatment is provided for 45 of the 46 surface water supplies, which serve 49 percent of the population. It is estimated approximately 43,000,000 gallons of water is pumped daily from the Cahaba River to supply part of Birmingham's water needs. The city of Birmingham lies outside of the basin area and most of this water is diverted as wastes to the Warrior River system and does not return to the basin.

The ground water sources are chiefly deep wells located in the Coastal Plain area of the basin. There are 82 of these municipal supplies serving approximately 23 percent of the population; eight receive complete treatment, 59 are only chlorinated, and no treatment is provided for the remaining 15.

There are a total of 20 industrial water supplies in the basin, ten from ground water, two from combined sources of both ground and surface water and eight from surface water. The population served, the plant capacity and type of treatment provided are known for 16 of these

TABLE 1 - WATER SUPPLIES IN ALABAMA RIVER BASIN - 1954

ALABAMA

Public Supply	(1) Source	Degree of Treatment (Population Served) (2) Complete	(3) Disinfection	None	Plant Capacity M.G.D.	Average Output M.G.D.
Acmar	G		3,000		0.930	0.100
Alabaster	W		500		0.039	0.013
Alexander City	S	12,000			2.000	0.675
Anniston-Oxford	G		52,000		20.000	8.000
Ashland	G		800		0.187	0.060
Ashville	G		350		0.122	0.040
Auburn	S	15,000			1.850	0.800
Birmingham	S	400,000			67.000	53.000
Bon Air	G		350		0.216	0.180
Boothton	W		1,000		0.300	0.100
Brent	W		1,200		0.144	0.030
Claera	G		1,500		0.216	0.041
Camden	W		1,500		0.090	0.040
Camp Hill	S	1,100			0.220	0.075
Centerville	W			1,300	0.080	0.080
Centre	S	1,000			0.100	0.063
Childersburg	G&W	4,000			0.576	0.200
Clanton	S	5,500			0.576	0.250
Collinsville	G		300		0.070	0.027
Columbiana	W		1,000		0.200	0.070
Dadeville	S	3,000			0.288	0.085
Draper Prison	W			1,300	0.500	0.190
E. Tallassee	S	6,000			1.240	0.750
Eclectic	W		1,000		0.144	0.028
Eden	W		300		0.072	0.017
Ellawhite	W		730		0.100	0.065
Fort Payne	S	7,000			0.885	0.700
Frisco City	W			1,250	0.144	0.144
Gadsden	S	65,000			12.000	7.200
Gantts Quarry	G		600		0.100	0.060
Glenco	G		1,500		0.288	0.040
Goodwater	S	1,500			0.107	0.050
Greenwood	W			300	0.050	0.015
Hammond	W			325	0.006	0.002
Haynesville	W		800		0.010	0.010
Heflin	W		[a]2,500		0.100	0.070
Irondale	G		[a]1,500		0.288	0.100
Jacksonville	G		[a]3,000		0.378	0.336
Public Service	G		650		0.100	0.050
Jemison	W		500		0.047	0.025
Jordan Dam	S	80			0.052	0.014
Kilby Prison	W		1,700		0.720	0.450

TABLE 1 - WATER SUPPLIES IN ALABAMA RIVER BASIN - 1954

ALABAMA (CONT'D)

Lay Dam	S	65			0.115	0.012
LaFayette	S	1,600			0.576	0.190
Leeds	G		3,500		0.500	0.300
Lincoln	W	1,000			0.060	0.040
Lineville	W			1,100	0.135	0.110
Lovick	S	155			0.036	0.025
Margaret	W		1,500		0.144	0.100
Marion	W	3,460			0.331	0.118
Martin Dam	S	45			0.200	0.012
Marvel	S		800		0.500	0.030
Mitchell Dam	S	40			0.080	0.010
Mitchell Village	S	400			0.660	0.025
Monroeville	W			2,250	0.500	0.238
Montevallo	G	1,540			0.216	0.116
Alabama College	G	800			0.234	0.117
Montgomery	W		120,000		22.000	12.500
New Acton	G		500		0.020	0.015
Notasulga	S	1,200			0.100	0.030
Opelika	S	15,000			3.000	1.200
Overton	S	900			0.108	0.043
Pell City	G		950		0.250	0.100
Piedmont	G		5,000		0.432	0.430
Pine Apple	W		500		0.060	0.025
Piper	S		1,000		0.144	0.129
Prattville	W		4,000		0.500	0.300
Prison # 4	W			500	0.057	0.025
Ragland	W	475			0.100	0.025
Roanoke	S	5,000			0.864	0.200
Rockford	W		[a]500		0.065	0.017
Selma	W	25,000			3.000	2.500
Shannon	W		400		0.130	0.015
Springville	G		900		0.144	0.075
Sycamore	G&W		1,200		0.500	0.250
Sylacauga	S	12,000			1.000	0.700
Talladega	S	12,000			4.000	1.400
Thorsby	W		[a]600		0.020	0.015
Trussville	W		1,400		0.288	0.170
Tuskegee	S	7,000			0.850	0.450
Institute	W		3,500		0.350	0.350
V.A. Hospital	S	3,000			0.500	0.400
Union Springs	W			3,500	1.000	0.200
Valley Head	G		500		0.144	0.100
Vincent	G		600		0.216	0.030
Vrendenburgh	W			975	0.466	0.100
Wedowee	W		500		0.080	0.015
W. Blocton	G		2,000		0.100	0.070
Wetumpka	S	5,000			0.648	0.272
Wilsonville	W		280		0.116	0.027
Wilton	G		300		0.090	0.008

ALABAMA (CONTINUED)

Public Supply	(1) Source	Degree of Treatment (Population Served) (2) Complete	(2) Disinfection	(3) None	Plant Capacity M.G.D.	Average Output M.G.D.
Yates Dam	S	60			0.050	0.008
Industrial Supply Alabama (Includes Mill Villages)						
Alexander City						
Russell Mfg. Co.	S	1,500			1.400	0.850
Anniston						
Anniston Mfg. Co.	W.			600	0.150	0.075
Centerville						
W.E. Belcher Inc.	W.			200	0.432	0.015
Childersburg						
Beaunit Mills	S					34.500
Coosa River Newsprint Co.	S					62.000
Gadsden						
Republic Steel	S					65.000
Jacksonville						
Profile Mills	G		700		0.144	0.144
Mignon						
Mill Village	G&W		5,000		1.440	1.000
Pell City						
Avondale Mills	G		600		1.000	0.350
Piedmont						
Std. Coosa Thatcher Co.	W		2,000		0.400	0.144
Roanoke						
Handley Mfg. Co.	W.		2,000		0.200	0.100
Siluria						
Buck Creek Cotton Mills	G		1,500		0.432	0.288
Union Springs						
Cowikee Mills	W			500	0.288	0.200
GEORGIA						
Acworth	W			800	0.150	0.147
Adairsville	G		570		0.070	0.040
Ballground	W			450	0.040	0.040
Blue Ridge	S		900		0.100	0.090
Bowdon	S	1,625			0.500	0.130
Bremen	S	1,500			0.288	0.200
Buchanan	S	329			0.216	0.100
Calhoun	S	1,900			1.196	0.300
Canton	S	2,200			0.500	0.150
Carrollton	S	8,000			1.500	0.500
Cartersville	S	3,900			2.000	1.160

GEORGIA (CONTINUED)

Public Supply	Source (1)	Degree of Treatment (Population Served) Complete (2)	Disinfection (3)	None	Plant Capacity M.G.D.	Average Output M.G.D.
Cave Springs	G		800		0.100	0.080
School	G		300		0.180	0.025
Cedartown	G		8,800		6.000	1.300
Chatsworth	S	750			0.180	0.100
Clayton	G	1,000			0.670	0.200
Dallas	S	1,060			0.144	0.040
Dalton	S	6,000			5.000	3.300
Ellijay	G&W		1,200		0.200	0.150
Emerson	W		600		0.036	0.018
Fairmount	W		600	0	0.100	0.060
Jasper	W			500	0.100	0.050
Kennesaw	W		600		0.100	0.050
Kingston	W		650			
LaFayette	G		3,200		0.500	0.200
Lyerly	G		675		0.172	0.050
Nelson	W			400	0.030	0.025
Rockmart	S	3,400		4	0.500	0.350
Rome	S	20,500			6.000	2.500
Berry School	S	700			0.500	0.400
Darlington Sch.	G		200		0.072	0.040
Sumerville	G		1,200		0.400	0.175
Tallapoosa	S	2,500			0.500	0.200
Tate	W		600		0.100	0.060
Temple	S	450			0.072	0.060
Trion	G		2,200		1.500	1.000
Industrial Supply Georgia (Includes Mill Villages)						
Cartersville						
Atco	W			1,200	0.100	0.060
Aragon						
Aragon Mills	G		680		0.144	0.100
Berryton						
Berryton Mills	W		600			
Canton						
Cherokee Mills	S	500			1.344	0.075
Dalton						
American Thread Co.	S	1,070			0.144	0.075
Lindale						
Pepperell Mills	W&G		2,500		0.300	0.300
Rome						
Cleanese Corp.	S	2,000			5.000	5.000
Shannon						
Brighton Mills	S	1,500			0.500	0.250
Basin Total for Public Water Supplies						
Surface Supplies		637,350	800	0	86.615	58.904
Ground Supplies		37,275	245,105	18,950	46.985	28.154
Total		674,625	245,905	18,950	133.600	87.058

Public Supply	Source (1)	Degree of Treatment (Population Served) Complete (2)	Disinfection (3)	None (3)	Plant Capacity M.G.D.	Average Output M.G.D.
Basin Total for Industrial Water Supplies						
Surface Supplies		6,570	0	0		167.750
Ground Supplies		0	15,580	2,500		2.776
Basin Ind. Total		6,570	15,580	2,500		170.526
Basin Total for Public and Industrial Water Supplies						
Surface Supplies		643,920	800	0		226.654
Ground Supplies		37,275	260,105	21,450		30.930
Grand Total		681,195	260,905	21,450		257.584

(1) G-Springs
S-Surface
W-Wells

(2) Coagulation, Sedimentation, Filtration, and Disinfection

(3) Disinfection only, except where noted

a Includes minor treatment in addition to disinfection

supplies. These data and that available for the other four separate industrial water supplies are shown in Table 1. The total daily consumption for these plants is over 170 million gallons per day. Of this amount surface water sources supply over 167 million gallons or approximately 98 percent of the industrial water requirements.

The amounts of water used for agricultural purposes are increasing. The increased production of beef, dairy and other livestock products require increased livestock watering supplies. In some areas irrigation is being used to insure against possible droughts.

Hydro-electric power development was started early in the century. The natural falls at the edge of the Piedmont Plateau, provided excellent hydropower sites. The electric power generated was transmitted and integrated with the power supplies in Georgia and Tennessee. As demands grew, steam power supplemented hydro-electric and the Martin Reservoir was built on the Tallapoosa River to make hydropower more dependable. Today the energy requirements of the southeastern region are supplied by hydro and thermal power in approximately equal quantities.

Hydro-electric power developed in the Alabama Basin is marketed in the Southern States of the southeastern region. By transmission interchange between the Tennessee Valley Authority, the Alabama Power Company and the Georgia Power Company, a high degree of coordination of electric facilities exists in the nine state area. For both electric power generation and marketing, the Alabama Basin must be considered as part of the southeastern region.

On the Coosa and Tallapoosa Rivers in Alabama, the Alabama Power Company operates six hydro-electric plants with a combined installation of 418,000 kilowatt capacity. These plants generate about two billion kilowatt hours of energy per year. The Federal Government has recently completed the Allatoona Reservoir with an initial installed capacity of 74,000 kilowatts which will generate 169,000,000 kilowatt hours of energy in the average year.

No Federal or private hydro-electric plants are presently under construction in the Alabama Basin. Four Federal projects have been authorized for which construction funds have not been made available. These include the Howell Mill Shoals project on the Coosa River for power, flood control and future navigation, and the Jones Bluff and Millers Ferry projects for power and navigation on the Alabama River. The ultimate installed capacity at these three plants will total 299,000 kilowatts with an average annual generation of 1,285,000 kilowatt hours of energy. The Claiborne project, on the lower Alabama River is authorized for navigation but will require more study in relation to the coordinated development of power and navigation with respect to the Tombigbee River. At Allatoona Dam an additional 36,000 kilowatt unit is authorized for installation at some future time.

With undeveloped hydro-electric power possibilities estimated at 1,307,000 kilowatts for the Alabama Basin, it is evident that electric power could be provided for considerable industrial expansion.

The first improvement of the Alabama River was a series of locks and dams in the Coosa River to enable shallow draft navigation to reach Rome, Georgia. As the early type of traffic disappeared and power dams were built across the lower river, the need for those navigation structures ended and they have been abandoned.

Commercial navigation is now limited to the lower reaches of the Alabama River and no navigation structures are maintained at the present time. Controlling channel depth to Montgomery, Alabama is about 3½ feet.

No commerce has been reported on the Coosa River since 1940. The Alabama River's recent average annual movement has been about 78,000 tons. This tonnage is made up of gravel, sand, logs, and pulpwood which is barged or rafted to Mobile from the lower reaches of the basin.

The river never freezes over and is open to navigation all year round. Through the Mobile and Tombigbee Rivers, it is connected with the Intercoastal Waterway, the Port of Mobile and through the Tombigbee-Warrior system to Birmingham.

No improvements for navigation are being constructed at the present time. A Federal project for a navigation channel nine feet deep from the mouth of the Alabama River to Montgomery has been authorized as an initial part of the basin-wide plan for developing the water resources of the basin. This improvement would be accomplished by channel dredging in the lower river and by constructing one low-lift lock and dam for navigation only and two higher dams, each with lock and power installation. The structures in the channel below Montgomery have been so designed that the channel depth can later be increased to twelve feet without altering the structures.

The Alabama Basin is lacking in attractive natural fresh water bodies. Reservoirs in the basin, therefore, in general possess good recreational potentialities. However, existing reservoirs, except for the recently completed Allatoona, are private developments whose shores are almost completely in private ownership and are not available for public recreation use.

Public, non-urban recreation areas have been developed by State agencies. Five State parks in Alabama and one in Georgia are located in the Alabama watershed. Several small historic areas are administered as part of the National Park System, although there are no National Park areas of recreational importance in the basin. Ten recreation areas of predominantly local significance have been developed by the U.S. Forest Service in the portions of the Chattahoochee and Talladega National Forests which lie within the basin. Additional recreational facilities are needed to serve the people within the Alabama Basin.

Fish and wildlife values range from low to moderate in the headwaters and central portion of the Alabama Basin to high in the coastal plain portion. While sport fishing predominates along the Coosa River and its tributaries, commercial fishing is concentrated in the lower portion of the basin.

ALABAMA RIVER BASIN

EXISTING PRIMARY WATER USES

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
DIVISION OF WATER POLLUTION CONTROL

MAP NO. 1

ALABAMA RIVER BASIN

MUNICIPAL AND INDUSTRIAL WASTE TREATMENT NEEDS

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
DIVISION OF WATER POLLUTION CONTROL

MAP NO. 2

20-B

TABLE A

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In number of Municipalities)	Population Served by Sewage System	Amount of Pollution Discharged to Watercourse (In terms of Equivalent No. of People)**
Having data on pollution load discharged to watercourse	[a] 61	331,175	287,835
Having Population data available (Data on pollution load to watercourse incomplete or not available)	[b] 25	74,320	
TOTAL	[c] 87	405,495	

* Includes incorporated or unincorporated municipalities; other legal bodies as sanitary districts, counties, towns; significant institutions, resorts, recreational centers or other population centers.

** Includes industrial wastes discharged into municipal sewage systems.

a Includes 12 municipalities with two outfalls each.

b Includes two municipalities with two outfalls each.

c Includes one military installation for which neither population served nor amount of pollution discharged to watercourse was available.

TABLE B

SOURCES OF POLLUTION

INDUSTRIAL

Industries*	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent Number of People)
Producing Organic Wastes	[a] 30	199,145
Producing Organic Wasts	1	Undetermined
Producing Inorganic Wastes	[b] 2	Not Applicable
Producing Wastes of Undetermined Type	[c] 56	Undetermined
TOTAL	[d] 91	

* Industries having separate outlets discharging wastes directly to watercourse.

a Includes four industries with two outfalls each, eight industrial mill villages, and five industries discharging sanitary sewage only through a total of six outfalls. The 30 industries discharge their wastes through a total of 34 outfalls.

b These industries produce organic wastes of determined strength and are also included in that category.

c Of these 56 sources of industrial pollution located in the Georgia portion of the basin with "undetermined" P.E., the number having separate outlets discharging wastes directly to the watercourse is undetermined. Includes one mill village.

d Total adjusted to correct for duplication noted in footnote (b).

Problems in connection with present fish resources within the river system include those arising from poor land-use practices on tributary watersheds and from pollution by industrial wastes. Under its authority to conduct research and provide technical services on protection, propagation and utilization of fishery resources, the Fish and Wildlife Service operates two fish cultural stations which produce fish for stocking streams in the area. One such station is maintained by the State of Alabama.

Many of the natural swamp and marsh areas in the lower basin are important to the Mississippi Flyway supporting the population of migratory waterfowl. Although there are no Federal wildlife refuges in the Alabama Basin, Alabama and Georgia together operate seven State refuges, one of which accommodates water fowl. The others are used primarily for protection of deer and turkeys.

The Fish and Wildlife Service is considering the establishment of a National Wildlife Refuge, primarily for waterfowl, on one of the reservoirs authorized for construction by the Corps of Engineers. Such a refuge is needed in the Alabama Basin to provide protection and wintering areas for waterfowl as a part of the National Migratory Waterfowl Conservation Program.

The six dams constructed by the Alabama Power Company on the Coosa and Tallapoosa Rivers were built as a single-purpose project to develop power. However, they provide other benefits which are incidental to their primary purpose. The Martin Dam on the Tallapoosa River impounds sufficient water to provide a seasonal distribution of water flow through the power plants on that river. The regulation of water flow downstream from those plants is beneficial for the stabilization of water supply and for increasing the amount of water needed for dilution of wastes during dry periods. In addition, all the power lakes provide recreation opportunities since fishing and recreational boating are permitted in their waters.

POLLUTION CONTRIBUTED TO WATER RESOURCES

From the silt laden rivulets of the headwaters of the Alabama River throughout its entire length there are varying degrees of pollutional damage. Practically every center of population along the 756 miles of waterways discharges some wastes. A tabulation of basic data on sources of municipal and industrial pollution is found in Table 1, of the Appendix. These data are summarized in Tables A and B and the relative locations of the sources of pollution are shown on Fig. 1.

The river system receives the wastes from 87 communities and from 91 industrial plants. The wastes reaching the surface waters from 116 known sources of pollution for which data are available are reported to be equivalent to the raw sewage from 561,300 people. Over one-third of these organic wastes are discharges of various industries in the basin. The industrial wastes contain not only highly putrescible matter of sewage-

like character, but also toxic and otherwise objectionable substances, such as sediment, phenols, dyes, and other complex compounds detrimental to subsequent use of the water. The types and amount of waste produced by 56 industrial establishments are not known. More complete surveys should be made to determine the type, the amount, and all sources of pollutional substances now entering the basin's watercourses.

Of the 87 sewered municipalities, 34 with a combined population of 276,910 discharge the raw sewage into the Alabama River system. These include the cities of Canton, Carrollton, Cartersville, and Rome, Georgia and Anniston-Oxford, Attalla-Gadsden, Clanton, Montgomery, Prattville, Montevallo, Auburn, Tuskegee, and Selma, Alabama.

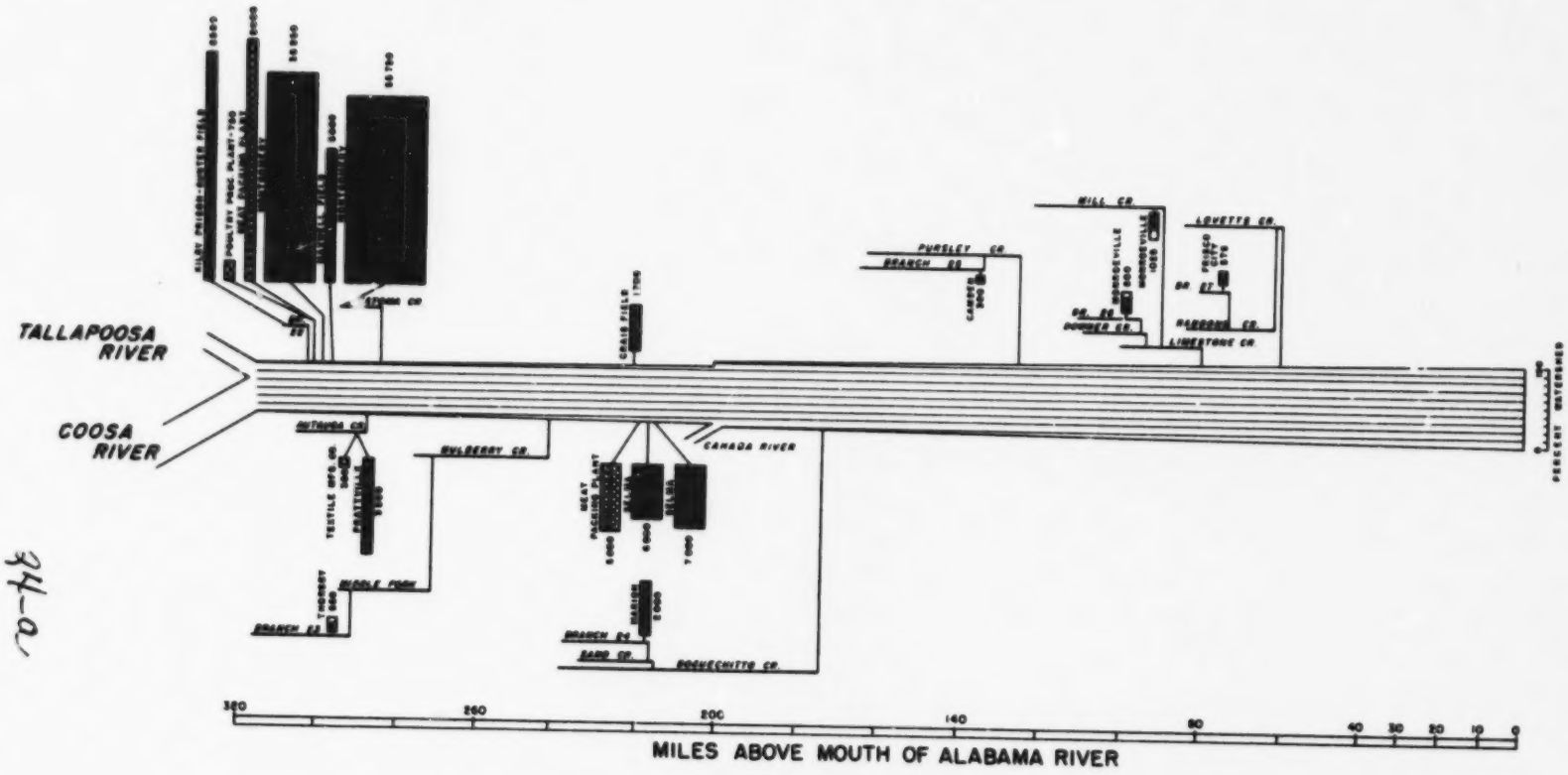
Seven metropolitan and/or industrial areas (Anniston-Oxford, Alexander City, Childersburg, Gadsden, Montgomery, and Selma, Alabama; Rome, Goergia) in the basin discharge industrial and domestic wastes with a total estimated population equivalent of 470,735 or approximately 84 percent of the total estimated amount of pollution contributed to the stream. Streams receiving the wastes from these seven metropolitan areas are affected for varying distances below the outfalls. Laboratory studies indicate sufficient stream flow to absorb this waste. These conclusions are based on present downstream water uses.

The sewage from a population of 128,585 (about 31 percent of the total sewered population) receives treatment of some type prior to discharge into the watercourses. Data are not available in regards to the population equivalent of wastes discharged to the watercourse from many of the municipal sources of pollution in the upper reaches of the valley. For these sources the estimated population served has been shown. Many industrial establishments are connected to city sewerage systems. In such cases the population equivalent of the combined wastes, even after partial treatment, may be greater than the sewered population.

Textile mill products industry with 55 plants and six mill villages constitute the most numerous sources of industrial pollution. They represent 67 percent of all major industrial sources. The 11 chemical and allied type industries, which constitutes 12 percent of the total, comprise the second most numerous group. There are also two paper and allied products and seven food plants which contribute major amounts of pollution to the watercourses. The total number of industrial plants which have separate waste outlets discharging directly to the watercourse is undetermined. Information is not presently available relative to 56 industries already in operation nor one paper pulp mill which is now being constructed on the Coosa River.

DAMAGES TO WATER RESOURCES FROM POLLUTION

The surface waters are not extensively damaged by pollution. However, the streams in the more highly developed areas, are damaged as pollution control has not kept pace with urban and industrial development.



SEWERED POP. EQUIV. (1,000)

DOMESTIC — REDUCTION BY TREATMENT / AS DISCHARGED — INDUSTRIAL

WIDTH OF STREAM AT ANY POINT, REPRESENTS TRIBUTARY WATERSHED

ZERO MILES REPRESENTS CONFLUENCE OF ALABAMA AND TOMBIGBEE RIVERS TO FORM THE MOBILE RIVER

ALABAMA RIVER BASIN

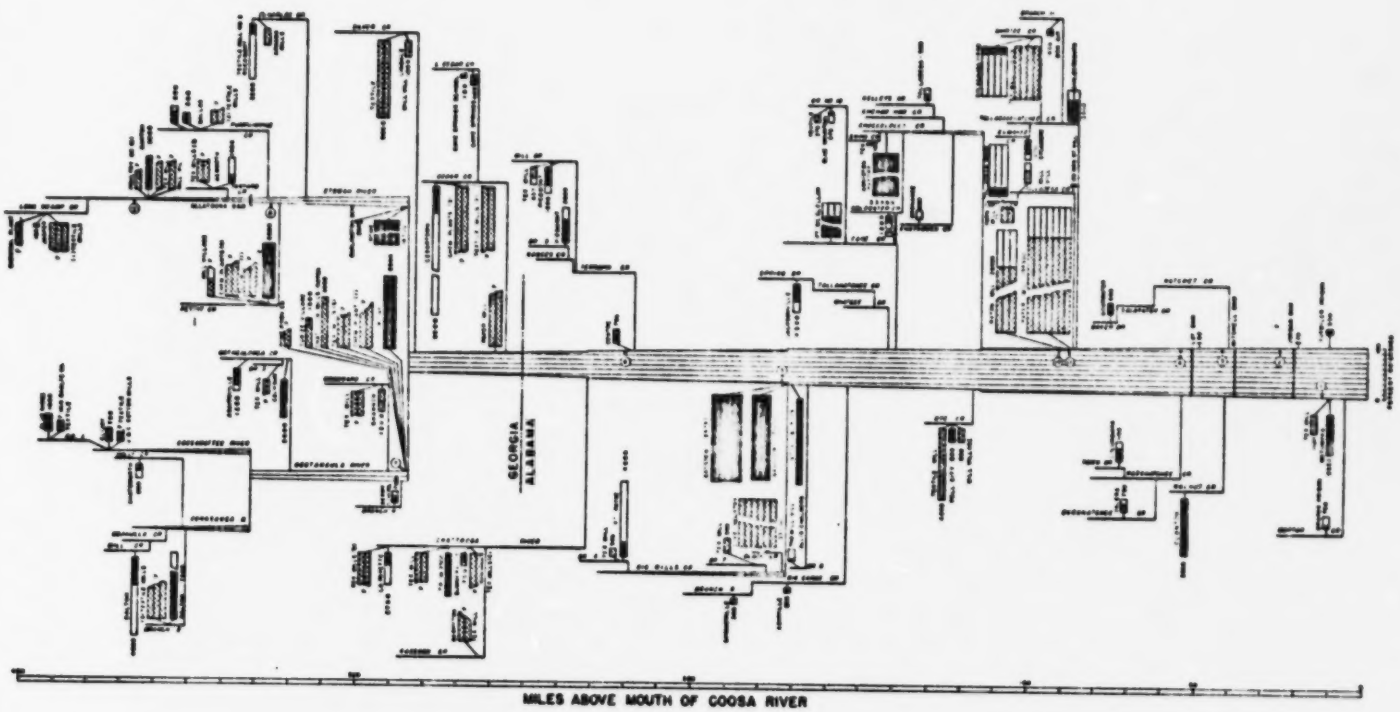
SOURCES OF POLLUTION

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
DIVISION OF WATER POLLUTION CONTROL

FIG. NO. 1

DHEW-ATLANTA, GA.

0-47-a



COOSA RIVER BASIN

SOURCES OF POLLUTION

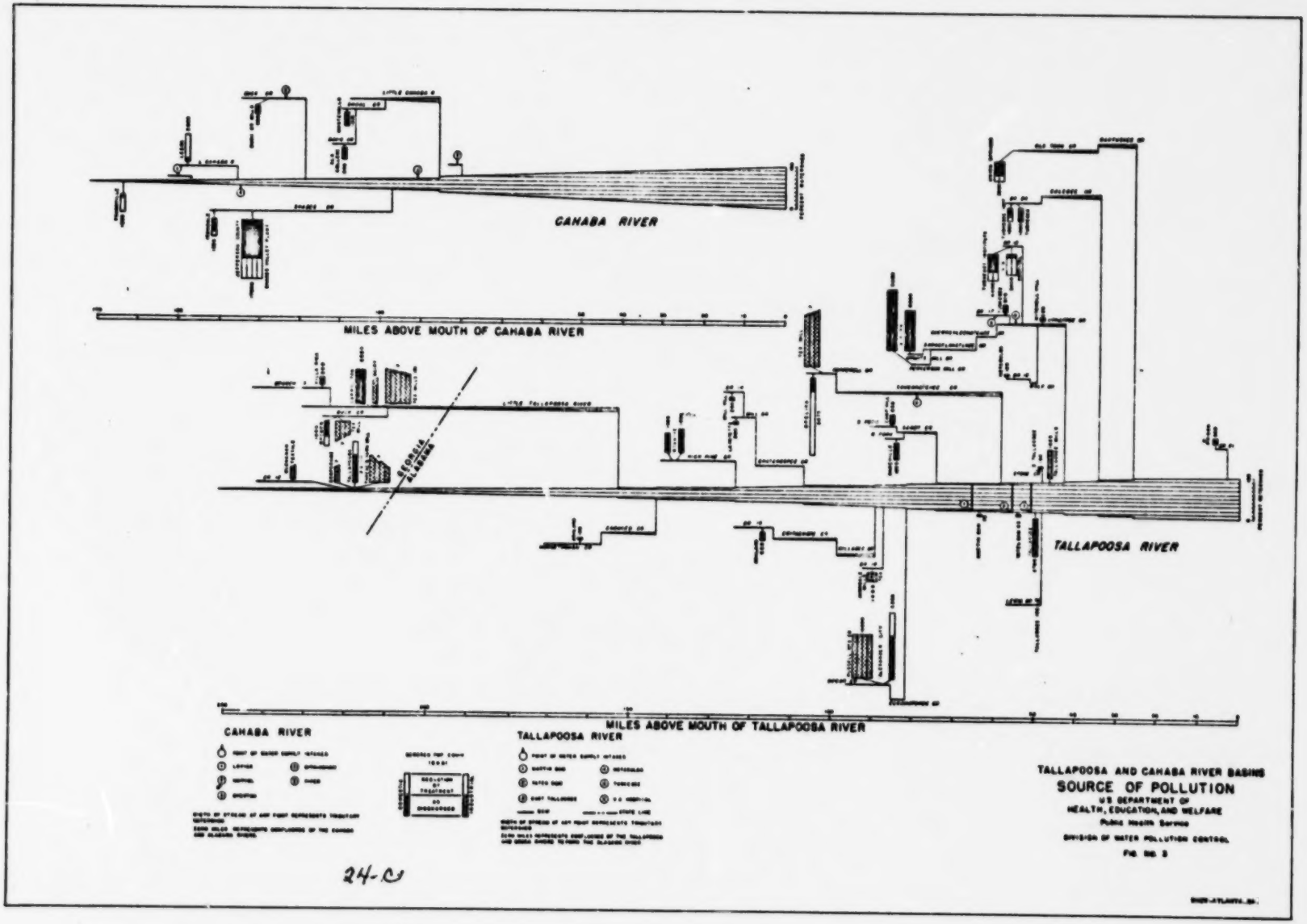
U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Public Health Service

DIVISION OF WATER POLLUTION CONTROL

FIG. NO. 2

24-B


CAHABA RIVER
MILES ABOVE MOUTH OF CAHABA RIVER
GEORGIA
ALABAMA
TALLAPOOSA RIVER
MILES ABOVE MOUTH OF TALLAPOOSA RIVER
CAHABA RIVER
TALLAPOOSA RIVER
TALLAPOOSA AND CAHABA RIVER BASINS
SOURCE OF POLLUTION
US DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
DIVISION OF WATER POLLUTION CONTROL

24-C

TABLE C

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number of Municipalities Served *	Number of Treatment Plants	Population Served
Primary	[a] 35	39	66,470
Secondary **	[b] 20	21	62,115
No Treatment	[c] 34		276,910

* Includes incorporated or unincorporated municipalities; other legal bodies as sanitary districts, counties, towns; significant institutions, resorts, recreational centers or other population centers.

** Includes "intermediate" treatment plants.

a Includes Dalton, Georgia, also listed in "Secondary Treatment", and Tallassee, Ala., also listed in "No Treatment".

b Includes one military installation for which population served is not available.

c Includes seven municipalities with two outfalls each.

TABLE D

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

Type Industry	Number of Plants	Number of Industrial Plants having Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Chemical & Allied Products	11	1	1	9
Fabricated Metal Products				
Sanitary Sewage	1	1		
Food & Kindred Products	7		3	4
Ordnance Works Villages	[a]3	3		
Paper & Allied Products	2	1		1
Primary Metal Products	[b]1		[b]1	
Textile Mill Products	55	2	13	40
Sanitary Sewage	[c] 5	4	1	
Mill Villages	[d] 6	4	1	1
Wood Products	1			1
TOTAL	[e] 91	16	[e]19	[f]56

* Industries having separate outlets discharging wastes directly to watercourse.

a Includes two villages at one ordnance installation.

b Also included in Chemical & Allied Products.

c Includes two sanitary sewage outfalls at one textile mill.

d Two industries with mill villages also included in Textile Mill Products.

e Total adjusted to correct for duplication noted in footnotes a, b, c, and d.

f The number of industries having separate outlets discharging wastes directly to the watercourse in the Georgia portion of the basin is unreported.

The most critical stretch of the Alabama River system from a pollutional standpoint is at the heavily populated metropolitan area of Montgomery where no treatment is provided for municipal sewage or industrial wastes. Catoma Creek, which receives approximately 65 percent of domestic sewage from metropolitan Montgomery, is grossly polluted for nine miles downstream to its confluence with the Alabama River. Conditions exist along Catoma Creek which are a serious hazard to health. The Alabama River is not detrimentally affected.

Undesirable conditions exist in the Coosa River below Gadsden, Alabama, Choccalocco Creek below Anniston-Oxford, Uphapee Creek below Auburn, Sougahatchee Creek below Opelika, the Etowah River below Canton, Cartersville and Rome, Georgia.

Damages to the water resources of the basin by silt resulting from soil erosion is of tremendous economic importance. Erosion causes depletion of soil fertility resulting in low crop production and huge economic losses. This is particularly true in the red clay and clay loam hilly areas of the basin. Silting also decreases the effective storage capacity of the power and flood control reservoirs, blocks navigation channels, thus creating real engineering and economic problems. Silt has a very real damaging effect on water supplies for domestic, industrial, and livestock uses. It is detrimental to fish and aquatic life development in the streams. It limits game and commercial fishing and many other forms of recreation. There are also instances where silt and other waste by-products from industrial and ore processing plants are causing nuisance conditions.

Swimming pools, artificial impoundments and other facilities replacing lost natural recreational resources require the expenditure of hundreds of thousands of dollars. Artificial facilities, however, can never fully compensate for the loss of natural bathing places. The added charm of swimming or wading in natural waters, fishing or boating in stream or lakes unimpaired by unsightly pollution, and hiking or picnicking in areas of natural beauty are by far the preferential recreation for a majority of the people. Many recreational areas damaged by pollution still have potential value, and could be reclaimed and developed as part of the comprehensive water pollution control program.

The depreciation of property values can be a direct result of pollution. The devaluation of realty is directly proportional to the proximity of a nuisance. No one is desirous of living in an unhealthy environment or near nuisances which are extremely obnoxious to any one of the five human senses.

Damages to fishery resources of the basin have been those which adversely affected the ability of the watercourse to propagate aquatic life and those that destroyed the fish directly. The adverse effects include those resulting from the destruction of stream vegetation that afford a natural habitat and food for the young fish. This vegetation may be killed by the organic or inorganic material in industrial wastes and municipal sewage. Some direct kills are cuased by highly toxic chemical wastes including agriculture insecticides, others by the deple-

tion of oxygen resulting from the decomposition of organic wastes. The greatest damage occurs during the late summer and early fall because of the high water temperatures, low stream flows and additional wastes from seasonal processing being added to the other usual wastes. These factors cause periodic fish kills especially in the smaller tributaries by poisoning or suffocation.

Some damages such as increased cost of development and operation of water supplies can be fairly accurately estimated, while others such as the effect on recreational and aesthetic values, cannot be readily estimated.

It is impossible to place a dollar value on civic pride and pleasure to be gained by the conservation of our water resources through pollution control.

BENEFITS RESULTING FROM POLLUTION PREVENTION AND ABATEMENT

There are many tangible and intangible benefits that accrue from the abatement and prevention of water pollution. In the Alabama River Basin some progress has been made in pollution abatement, particularly in the field of municipal sewage treatment. Pollution abatement activities, however, have not kept pace with municipal and industrial growth, the resulting benefits, therefore, have been generally obscured by the effect of other sources of pollution.

Existing municipal treatment plants provide some treatment for about 30 percent of the municipal sewage. However, less than 30 percent of these plants were reported as having adequate capacity for their present connected sewage load.

Data regarding the industrial wastes treatment are incomplete. What data are available indicate only 18 percent of the industrial plants provide any treatment facilities and only one-fifth of these have adequate capacity.

The reclaiming of caustic and the treatment of sulfur dye wastes by Pepperill Mill and the enlargement of the Opelika municipal sewage treatment plant to handle the mill village's wastes have improved the water quality of Sougahatchee Creek. This creek is the source of raw water for Notasulga, Alabama.

Some of the recently constructed industrial plants such as the Coosa News Print Plant near Childersburg, Alabama have been designed so as to minimize the amount of wastes discharged. This results in double benefits. It reduces the cost of waste treatment and saves valuable materials.

The reservoirs above Montgomery are operated so as to provide a minimum flow of 6,000 c.f.s. at Montgomery. Such releases afford dilution water and may have a beneficial effect. The impounded waters of

the basin, however, are released primarily for power, navigation, and flood control purposes. The regulations of existing and contemplated reservoirs and downstream areas in the interest of pollution abatement would substantially benefit public health. The fish resources would be improved and recreational areas could be provided.

Benefits resulting from recreational developments in reservoir areas are clearly indicated by the use of available facilities. Land locked Atlanta has an active Yatch Club at Allatoona Reservoir. A master recreational plan has been developed for this area; it includes, State and county parks, boat-launching ramps, several organized group camps, and two private cabin and club sites. Additional recreational areas are needed in the basin.

The forestry and soil conservation programs of the State and Federal agencies based on the proper utilization of the land are reducing soil losses from both private and public lands. The benefits are many. Reforestation of lands which eroded badly when used for agricultural purposes is reducing the silt load on the streams. By assigning lands to their highest use and improvement of management practices, crop, forest, and pasture yields can be increased greatly. Soil losses will be checked and the water quality of the streams improved.

The sustained output of timber products is remarkable considering the downward trend of the forest resources. This reflects the inherent productivity and great recuperative powers of the forest of the region. Alabama ranks high in lumber production and in the output of pulp wood.

For truly comprehensive development of the water resources, all projects should be planned and operated to afford maximum pollution abatement throughout the entire basin.

POLLUTION PREVENTION MEASURES IN EFFECT

In 1947 the State of Alabama enacted legislation creating a "Water Improvement Advisory Commission". A commission of fifteen members was appointed in January 1948. Membership includes: the State Health Officer (Chairman), the Director of the State Department of Conservation, the State Geologist and the State Commissioner of Agriculture and Industries. Two additional members were appointed by the Deans of the State's two major engineering schools and the other nine members were appointed by the Govenor from selected groups. The Chief Engineer of the State Board of Health serves as technical secretary to the Commission. The act was amended in 1949 giving relatively bread powers to the Commission for water pollution control and abatement.

Following enactment of the law, the State of Alabama started a statewide program of water pollution control. It has completed a reconnaissance of all its streams.* They are now making detailed studies

* Studies of Pollution in Streams of Alabama. State of Alabama Water Improvement Advisory Commission, 1949.

of wastes discharged to river basins and carefully checking the efficiency of existing waste treatment plants. This basic information is essential for the preparation of a comprehensive plan for the fullest and most economical use of the waters of the State. These data are not available for the entire basin.

The number of existing sewage treatment plants in the basin indicates the progress the State agencies have made in the abatement of pollution. Of the 87 sewered municipalities, 55 provide some treatment for their wastes. There are 39 primary plants serving an estimated connected population of 66,470. Twenty municipalities with a total estimated population served of 62,115 provide secondary treatment for their wastes. The adequacy of these treatment plants in regard to their capacity and operation has been reported for 40 plants. Only 19 of these (serving 45,635 people) are of adequate size for present connected loads.

Very little information is available regarding industrial waste treatment. Only 16 waste treatment plants are reported for the 91 industrial plants, 12 of these treat only sanitary sewage. In some cases the treatment provided consists only of lagoons. Only three of the industrial waste treatment plants are reported as being of satisfactory capacity.

Progress in the construction of pollution abatement facilities for the period 1946 through 1951 is summarized in Table G. Three municipal sewage treatment plants were completed with a designed population of over 9,750. Design data were not available for two other plants. A municipal sewage treatment plant with a total designed population of 2,000 was in the process of construction during the 1951-1952 period. One industrial waste treatment plant for caustic recovery and sulfur dye waste treatment was placed in operation during 1950. Two other industrial waste treatment plants were completed in 1951 and waste treatment facilities were being provided for another industrial plant. Designed figures for these plants were not available.

Interest in stream pollution abatement by Sportsmen's Associations and some representatives of industry has been evident in Alabama. These groups are supporting the State agency's recommendations for changes in the existing law. It is hoped that the law can be revised deleting those sections which exempted certain streams and that additional funds will be appropriated. The program has been limited by a lack of funds which has created a shortage of personnel.

POLLUTION PREVENTION MEASURES REQUIRED

The major problem of the Alabama Basin is the provision of adequate economic opportunity for the people of the area. This basin like much of the southeast section of the United States, is an area of low rural income with heavy population pressure upon the land. A start has been made towards the shifting of people out of agriculture to employment in other fields. Opportunities to solve the problem of employment lie in the direction of expanded industrial activity.

TABLE E

ADEQUACY OF EXISTING TREATMENT FACILITIES

MUNICIPAL *

Number of Municipal Treatment Facilities	Adequacy with relation to: Capacity			Operation		
	Sat.	Unsat.	Undetermined	Sat.	Unsat.	Undetermined
60	19	21	20	35	5	20

* Includes incorporated or unincorporated municipalities; other legal bodies as sanitary districts, counties, towns; significant institutions, resorts, recreational centers or other population centers. Data to complete this table has not been reported by Georgia.

TABLE F

ADEQUACY OF EXISTING TREATMENT FACILITIES

INDUSTRIAL *

Number of Industrial Treatment Facilities	Adequacy with Relation to: Capacity			Operation		
	Sat.	Unsat.	Undetermined	Sat.	Unsat.	Undetermined
[a] 16	3	3	10	6	0	10

* Industries having separate outlets discharging wastes directly to watercourse. Data as to adequacy of treatment facilities has not been reported by Georgia

a Includes mill villages and industries discharging domestic sewage only.

Many industrial plants, especially those in the chemical, textile, and paper industries require abundant, pure, and reliable water supplies. The southern Appalachians provide the last big source of such water in the East still available for development. Industrial expansion can be stimulated and encouraged by carefully planned development of the basin's water resources.

There is a need for a comprehensive water pollution control action program, one that will assure the fullest economical use of the water resources. Such a program must consider all present water uses and provide protection for all water rights. Existing pollution which limits full use of the water resources must be abated. New pollution must be prevented so that the selected water quality objectives which need to be reasonably established for such water uses as domestic and industrial water supply, livestock watering, propagation of fish and aquatic life, bathing and recreation, can be maintained.

It is desirable that such a plan be presented as a written document. It should be remembered, however, an active program cannot remain static. Such a program must be revised from time to time to keep current with the municipal and industrial expansion and record progress and accomplishment.

The most important objective of a water pollution control program is the protection of water quality in streams used as sources of public water supplies. The surface streams of the basin provide approximately 90 percent of the present domestic and industrial water requirement. Industrial expansion will depend on surface water supplies. If the streams can be kept free from damaging pollution they will provide almost unlimited opportunity for economic expansion. The quality of the raw water is an important factor in the design, operation and maintenance of water treatment facilities.

The municipalities and industries should be aware of the water quality requirements of the various downstream uses. In selecting sites for any industrial plant, the type and volume of wastes to be produced and their effect on the water quality objectives selected for the stream should be considered. The degree of treatment to be provided for the wastes should be based on the downstream water requirements.

The reported needed improvements for pollution abatement are listed in Table L. These data for municipal waste treatment needs have been summarized in Table H. Seventeen new plants are needed to serve a total estimated population of 120,450. Seventeen existing plants which serve a population of 50,600 need enlargements or additions. One plant serving 3,000 people needs to be replaced with a new plant. Eighteen of the municipalities listed require no project. The waste treatment needs for 48 municipalities in the basin with a total population of 188,900 are reported as undetermined. Of the 60 municipal waste treatment plants listed in Table E, only 19 are reported as having adequate capacity for their present loading.

Data regarding industrial waste pollution abatement needs are summarized in Table I. The needs of only four industries are listed.

These include one new plant and enlargements or additions to three existing treatment plants. Tables J and K show the reported status of municipal and industrial action on pollution abatement needs.

Considerable progress in the construction of needed treatment facilities is currently being made by municipalities. One municipality has treatment facilities under construction and others are preparing plans. Three industries in the Alabama portion of the basin have recently completed treatment plants for the handling of their industrial wastes.

There are numerous gaps in the available information which makes it extremely difficult to properly evaluate the data. It is apparent however, that there are seven critical areas which discharge to the watercourse approximately 94 percent of the total reported amount of industrial pollution and over 61 percent of the total amount of domestic pollution. Some of these critical areas are planning remedial works. The construction of adequate facilities to handle the wastes from these seven critical areas would eliminate all of the reported major sources of pollution.

Additional field surveys are needed to evaluate the pollutional discharges from individual industrial plants and municipalities which are reported as undetermined and also to determine the effectiveness of existing treatment facilities. Such data will fill the many gaps in the existing pollution picture and are necessary to permit full cooperation of industries and municipalities in pollution abatement work.

The authority to control water pollution began with the common law dealing with public nuisances, riparian rights, private damages, equity and similar facets of law. The tools for controlling water pollution furnished by common law are largely punitive, applicable after pollution has done some damage. The authority under such law is usually divided between several agencies with the major efforts to control pollution being made in the fields of public health and wildlife conservation. As the need for some sort of restraint prior to the pollution of the water has grown, the health departments of many States were given statutory power and responsibilities for controlling pollution. Similar powers and responsibilities were given other agencies for the protection of fish and game. To correct some of the inadequacies of the common law, the legislatures of several States have enacted specific water pollution control legislation. Alabama has such a law which places full responsibility of water pollution control in the State Water Improvement Commission. Georgia relies entirely upon the powers derived from the common law.

The development of a comprehensive water pollution control program for the entire basin would be facilitated by the classification of all streams. While Georgia has no law regarding classification, the Alabama law authorizes classification of the streams.

Most of the municipal construction work since 1935 has been financed by revenue bonds. Such bonds for water and sewage construction are exempt from the bond indebtedness limitation placed on municipalities. This method of financing is probably the most desirable one, since it equally distributes the cost.

TABLE G

PROGRESS IN CONSTRUCTION OF POLLUTION

ABATEMENT FACILITIES

	Municipal		Industrial	
Year	Sewage Treatment Plants Completed	Design Population	Waste Treatment Plants Completed	Amount of Waste Treated (In terms of Equiv. No. People)
1946	0		0	
1947	3	[a] 7,250	0	
1948	0		0	
1949	0		0	
1950	2	[a] 2,500	1	(c)
1951	[b] 0		2	[d] 181,300

a Design population undetermined for one plant.

b One plant is under construction in the basin area.

c Only caustic recovery and sulfur dye waste treatment. Sanitary sewage to city sewer.

d Strength of treated wastes.

TABLE H

WASTE TREATMENT NEEDS

MUNICIPAL *

Needs	Number	Population Served by Facilities
New Plant	[a] 17	120,450
Enlargement or Additions to Existing Plant	17	50,600
Replace Existing Plant	1	3,000
No Project Required	[b] 18	42,545
Undetermined	[c] 48	188,900

* Includes incorporated or unincorporated municipalities; other legal bodies as sanitary districts, counties, towns; significant institutions, resorts, recreational centers or other population centers. Georgia has not reported information regarding project requirements; therefore all Georgia sources of pollution are classified as undetermined.

a Includes one plant unsatisfactory in capacity that has been considered as requiring a new plant rather than a replacement.

b Includes one municipality without treatment facilities that is classified as requiring no project since the disposal of its untreated wastes is considered satisfactory at the present time.

c Includes 27 sources of pollution in Georgia; 21 in Alabama; of which 14 are without treatment facilities and the adequacy as to capacity of the other seven are reported as: one satisfactory, two unsatisfactory, and four undetermined.

The limited available data will not permit estimating the total construction cost of all treatment works required to abate the existing pollution resulting from municipal and industrial waste discharges. However, the estimated construction cost of municipal sewage treatment plants reported to be needed by 35 municipalities is $7,500,000. The estimated cost of these plants was based on the sewered population of the 35 municipalities. The issuance of revenue bonds would provide monies for the payment. The bonds could be redeemed by a small increase in the present water bills of those contributing the wastes requiring treatment.

All municipal and industrial plants discharging significant amounts of pollutional wastes to the watercourses as determined by the State Water Pollution Control Agencies should be required to provide adequate treatment facilities. Close coordination and cooperation by the various agencies and corporate interest involved are desirable. The treatment of combined wastes may in some cases be more economical than the construction of separate remedial works.

A comprehensive water pollution control program will include all the needed remedial works and justify the construction of such works based on the protection of legitimate water uses. Such a report will classify the streams and acquaint industries and municipalities with the plan to prevent destruction of the water resources. Informational programs, which will help the general public to understand the planning, are of the utmost importance. It is the general public, as citizens of a municipality that must pay the cost of construction.

TABLE I

INDUSTRIAL WASTE POLLUTION ABATEMENT NEEDS*

Needs	Number
New Treatment Plant or Other Pollution Control Measures	1
Enlargement or Additions to Existing Plant	3
Replace Existing Plant	0
Connection to Municipal Sewer System	0
No Project Required	[a] 4
Undetermined	[b] 83

* Industries having separate outlets discharging wastes directly to watercourse. Information as to industrial waste pollution abatement needs is not available for the Georgia portion of the basin.

a One industrial plant with no treatment has been classified as requiring no project, since the disposal of its wastes is considered "satisfactory" at the present time.

b Includes 10 treatment plants whose adequacy as to capacity is undetermined, 17 industries without treatment facilities and 56 industries for which the treatment facilities are undetermined.

TABLE J

CURRENT STATUS OF MUNICIPAL ACTION ON

POLLUTION ABATEMENT NEEDS*

Status of Action	Number of Municipalities
Inactive	---
Active Planning	3
Final Plans Approved	1
Under Construction	1
Undetermined	78

* Includes incorporated or unincorporated municipalities; other legal bodies as sanitary districts, counties, towns; significant institutions, resorts, recreational centers or other population centers.

TABLE K

CURRENT STATUS OF INDUSTRIAL ACTION ON

POLLUTION ABATEMENT NEEDS*

Status of Action	Number of Industries*
Inactive	---
Active Planning	1
Final Plans Approved	0
Under Construction	0
Undetermined	86

* Industries having separate outlets discharging wastes directly to watercourse.

TABLE L

MUNICIPALITIES AND INDUSTRIES NEEDING
IMPROVEMENTS FOR ABATEMENT OF POLLUTION

November 1, 1953

Name and Location	Population Served*	Improvements Needed	Remarks
ALABAMA			
Alexander City	4,000	Additions	
Avondale Mills	Undet'd	Undet'd	
Russell Mfg. Co.	Undet'd	Undet'd	
Anniston-Oxford	33,200	New Plant	
Anniston Mfg. Co.	Undet'd	Undet'd	
Ashland # 1	600	Additions	
# 2	100	Additions	
Attalla	5,000	Undet'd	
Lawrence Prod. Co.	Undet'd	Undet'd	
Auburn	15,000	New Plant	
Bemiston			
Mill Village	1,100	Additions	
Blue Mountain			
Linen Thread Co.	375	Undet'd	
Bon Air	400	Undet'd	
Bynum-Anniston Ord.			
Depot # 3	1,500	Undet'd	
Calera	750	Additions	
Camden	300	New Plant	
Camp Hill	650	New Plant	
Centre	750	Undet'd	
Childersburg			
Coosa River Newsprint Co.	Undet'd	Undet'd	
Beaunit Mills	Undet'd	Undet'd	
Clanton	3,000	New Plant	
Columbiana	1,150	New Plant	Permit
Craig Field	1,700	Undet'd	Issued
Dadeville	1,000	New Plant	
East Tallassee	150	Undet'd	
Tallassee Mill Village	1,825	Undet'd	
Fort Payne			
W. B. Davis & Son	Undet'd	Undet'd	
Gadsden	40,000	Undet'd	
Republic Steel Corp.	Undet'd	Undet'd	
Goodwater	650	New Plant	
Gunter Field and			
Kilby Prison	8,500	Undet'd	
Irondale	1,300	Additions	
Jacksonville	4,500	Additions	
Jefferson County			
Shades Valley	17,000	Additions	

Name and Location	Population Served*	Improvements Needed	Remarks
LaFayette	300	Additions	
LaFayette Mill Village	250	Undet'd	
Marion	2,000	New Plant	Under Construction
Maxwell Field	5,000	Undet'd	
Monroeville # 1	Undet'd	Enlargement	
# 2			
Montevallo	1,000	New Plant	
Alabama College	850	New Plant	
Montgomery # 1	32,000	Undet'd	
# 2	55,000	New Plant	Act. Planning
Swift & Co	Undet'd	Undet'd	
Poultry Coop. Inc. Opelika	Undet'd	Undet'd	
Pepperell Mills	Undet'd	Undet'd	Act. Planning
Pell City	800	Additions	
Avondale Mill Village	1,200	Replacement	
Avondale Textile Mill	Undet'd	Undet'd	
Piedmont # 1	3,000	Additions	
# 2	2,600	Additions	
Std. Coosa Thatcher	1,000	Additions	
Prattville	3,000	New Plant	
Prison # 4	360	Undet'd	
Roanoke	3,300	Two New Plants	
Selma	13,000	Undet'd	
Zeigler Co.- Siluria	Undet'd	Undet'd	
Buck Creek Mills	500	Additions	
Springville	350	Undet'd	
Sycamore	1,200	Undet'd	
Sylacauga			
Avondale Mills	Undet'd	Undet'd	
Talladega			
Wehadkee Mills	Undet'd	Undet'd	
Tallassee	2,850	Undet'd	
Thorsby	550	Undet'd	
Tuskegee Institute	5,000	Additions to two Plants	
Tuskegee	1,500	New Plant	
V. A. Hospital	3,000	Enlargement	Under Construction
Tutwiler Prison	350	Undet'd	
Union Springs	3,000	Replacement	
Wetumpka	2,350	Undet'd	
Alabama Mills	Undet'd	Undet'd	

Name and Location	Population Served*	Improvements Needed	Remarks
GEORGIA			
Acworth			
Textile Mills (3)	Undet.	Unreported	
Aragon			
Textile Mills	Undet'd	Unreported	
Berryton			
Textile Mill	Undet'd	Unreported	
Blue Ridge			
Textile Mill	Undet'd	Unreported	
Bremen			
Textile Mills (3)	Undet'd	Unreported	
Buchanan			
Textile Mill	Undet'd	Unreported	
Calhoun	800	Unreported	
Textile Mill	Undet'd	Unreported	
Clanton	4,000	Unreported	
Mill Village	Undet'd	Unreported	
Poultry Processing Plants (2)	Undet'd	Unreported	
Textile Mill	Undet'd	Unreported	
Cartersville	6,500	Unreported	
Chemical Plants (4)	Undet'd	Unreported	
Textile Mill	Undet'd	Unreported	
Carrollton	5,000	Unreported	
Textile Mills (5)	Undet'd	Unreported	
Food Products	Undet'd	Unreported	
Cave Springs	800	Unreported	
Cedartown			
Chemical Plants (3)	Undet'd	Unreported	
Textile Mills (2)	Undet'd	Unreported	
Chatsworth	800	Unreported	
Dallas			
Textile Mills (2)	Undet'd	Unreported	
Dalton			
Textile Mills (3)	Undet'd	Unreported	
Ellijay	320	Unreported	
Textile Mill	Undet'd	Unreported	
Jasper			
Chem. & Allied Prod.	Undet'd	Unreported	
Textile Mill	Undet'd	Unreported	
LaFayette			
Textile Mills (3)	Undet'd	Unreported	
Lindale			
Textile Mill	9,000	Unreported	
Rockmart			
Textile Mill	Undet'd	Unreported	Tire cord Fabric
Rome # 1	16,500	Unreported	
# 2	8,500	Unreported	
Chemical Plant	Undet'd	Unreported	

Name and Location	Population Served*	Improvements Needed	Remarks
Mill Village	1,400	Unreported	
Paper Pulp Mill	Undet'd	Unreported	
Packing Plant	Undet'd	Unreported	
Textile Mills (5)	Undet'd	Unreported	
Textile Mill	3,000	Unreported	
Shannon Textile Mill	800	Unreported	
Summerville			
Textile Mills (2)	Undet'd	Unreported	
Tallapoosa			
Textile Mill	Undet'd	Unreported	
Wood Products	Undet'd	Unreported	
Trion	2,500	Unreported	
Textile Mill	Undet'd	Unreported	

* For industries the organic waste load is expressed as population equivalent as measured by Biochemical Oxygen Demand.

/ / / /

Table 1

Basic Data on Sources of Municipal* and Industrial** Pollution

Name and Location	River Miles Above Outlet Stream	Pop. Served by Sewers Type of Industry	Pop. Equiv. (B.O.D.) Untreated Wastes Type Waste Produced	Waste Treatment provided	Adequacy of Treatment Provided Cap'y	Opr.	Pollution Abatement Needs	Current Status of Municipal or Industrial Action
ALABAMA RIVER	A							
Coosa River	320	(199855)						
Tallapoosa River	320	(57295)						
Branch 22	304	(8500)						
Montgomery, Ala.	300	32,000	38,950	None			Undet'd	Undet'd
Swift and Company		Food	Organic	None			Undet'd	Undet'd
Poultry Co-op, Inc.		Food	Organic	None			Undet'd	Undet'd
Maxwell Field, Ala.	297	5,000	5,000	None			Undet'd	Undet'd
Augauga Creek	289	(3000)						
Catoma Creek	285	(55000)						
Mulberry Creek	243	(550)						
Craig Field, Ala.	221	1,700	1,700	None			Undet'd	Undet'd
Selma, Ala.	218	6,000	6,000	None			Undet'd	Undet'd
Zeigler Company		Food	Organic	None			Undet'd	Undet'd
Selma, Ala.	217	7,000	7,000	None			Undet'd	Undet'd
Cahaba River	201	(23450)						
Boguechitto Creek	175	(2000)						
Pursley Creek	125	(300)						
Limestone Creek	80	(1800)						
Lovetts Creek	64	(575)						
COOSA RIVER								

Etowah River	286						
Oostanaula River	286						
Rome, Ga.	286						
Anchor Duck Mills		Textile					
Champion Garment Co.		Textile					
Floyd Mills		Textile					
Rome Hosiery Mills		Textile					
Rome Mfg. Co.		Textile					
Rome Prov. Co.		Food					
Tubize Rayon Corp.		Textile	Organic	None			
Tubize Village		Textile	Sewage	Primary	Undt'd	Undt'd	
Va. Fertilizer Co.		Chemical					
Silver Creek	284						
Mead Corp.	260	Paper					
Cedar Creek	257						
Chatooga River	232						
Centre, Ala.	220	750	750	None		Undet'd	Undet'd
Terrapin Creek	219						
Gadsden, Ala.	174	25,000	25,650	None		Undet'd	Undet'd
Gadsden, Ala.	173	15,000	15,000	None		Undet'd	Undet'd
Big Willis Creek	172						
Attalla, Ala.	171	5,000	5,025	None		Undet'd	Undet'd
Branch 8	167						
Big Canoe Creek	155						
Chatchee Creek	143						
Crane Creek	141						
Dye Creek	117						
Choccolocco Creek	115						
Talladega Creek	88						
Tallasseehatchee Creek	87						
Beaunit Mills	86	Chemical	Inorg.	Primary	Undt'd	Undt'd	Undet'd Undet'd
Coosa River Newsprint Co.	86	Paper	Organic	Primary	Undt'd	Undt'd	Undet'd Undet'd
Waxahatchee Creek	56						
Lay Dam, Ala.	51	60	60	None			None
Walnut Creek	42						

Table 1

Basic Data on Sources of Municipal* and Industrial** Pollution

Name and Loaction	River Miles Above Outlet Stream	Pop. Served by Sewers Type of Industry	Pop. Equiv. (B.O.D.) Untreated Wastes Type Waste Produced	Waste Treatment Provided	Adequacy of Treatment Provided Cap'y.	Opr.	Pollution Abatement Needs	Current Status of Municipal or Industrial Action
Hatchett Creek	41							
Jordan Dam, Ala.	18	70	70	None			Undet'd	Undet'd
Tutwiler Prison, Ala.	12	350	350	None			Undet'd	Undet'd
Wetumpka Ala.	10	2,350	2,350	None			Undet'd	Undet'd
Alabama Mills Co.	11	Textile	Organic	None			Undet'd	Undet'd
Mortor Creek	3							
Etowah River	ET	Tributary to Coosa at 286						
Long Swamp Creek	95							
Canton, Ga.	78	2,000		None				
Canton Mills		Textile						
Canton Mill Village		Textile						
Canton Poultry Co.		Food						
Lawson Poultry Co.		Food						
Tanyard Creek	54							
Allatoona Dam	47							
Pumpkinvine Creek	42							
Pettit Creek	38							
Euharlee Creek	31							
Rome, Ga.	0.3	20,000		None				
Darlington School		200		Primary				
Long Swamp Creek	LS							
Jasper, Ga.	12	500		Primary				
Nunelly McCrea Co.		Textile						
Thompson-Weinman Co.		Chemical						

Tanyard Creek	Ty						
Acworth, Ga.	4	1,500		Intermed.			
Acworth Mills	3	Textile					
Burtz Hosiery Mills		Textile					
Unique Hosiery Mills		Textile					
Pumpkinvine Creek	Pv						
Dallas, Ga. # 1	20	900		Primary			
Dallas, Ga. # 2		500		Primary			
Dallas Hosiery Mills		Textile					
Spinks Hosiery Mills		Textile					
Pettit Creek	Pe						
Atco, Ga.	4	1,200		Primary			Imhoff
Goodyear Mill # 3		Textile	Sewage	2 Primary	Undet'd	Undet'd	Tank under const.
Cartersville, Ga.	3	4,500		None			
Chemical Products Co.		Chemical					
E-Z Mill, Inc.		Textile					
Glidden Co.		Chemical					
Sou. Cotton Oil Co.		Chemical					
Thompson-Weinman Co.		Chemical					
Euharlee Creek	Eu						
Rockmart, Ga.	16	3,200		Secondary			
Goodyear Mill # 2		Textile					
Aragon, Ga.	13						
Aragon Mills		Textile					
Oostanaula River	Os	Tributary to Coosa at 286					
Coosawatte River	47						
Conasauga River	47						
Oothlooga Creek	35						
Woodward Creek	5						
Branch 4	2						
Coosawatte River	Cw						
Branch 1	42						
Ellijay, Ga.	42	750		None			
J.&.C.Cotton Mill		Textile					

Table 1

Basic Data on Sources of Municipal* and Industrial** Pollution

Name and Location	River Miles Above Outlet Stream	Pop. Served by Sewers Type of Industry	Pop. Equiv. (B.O.D.) Untreated Wastes Type Waste Produced	Waste Treatment Provided	Adequacy of Treatment Provided Cap'y. Opr.	Pollution Abatement Needs	Current Status of Municipal or Industrial Action
Branch 1	Br 1						
Blue Ridge, Ga.	18	1,000		Primary			
Van Raalte Company		Textile					
Conasauga River	Cn						
Coahulla Creek	25						
Holly Creek	20						
Branch 2	19						
Coahulla Creek	Co						
Mill Creek	5						
Mill Creek	MC						
Dalton, Ga.	4	4,500		Secondary			
Holly Creek	Ho						
Chattsworth, Ga.	13	700		Intermed.			
Branch 2	Br 2						
Dalton, Ga.	5	7,500		Primary			
Crown Cotton Mills			Textile				
Har Mills			Textile				
Real Silk Hosiery			Textile				
Oothcalooga Creek	Oc						
Adairsville, Ga.	12	1,200		Primary			
Branch 3	2						
Branch 3	Br 3						
Calhoun, Ga.	1	2,000		None			
Echota Cotton Mills		Textile					

Branch 4	Br 4					
Berry School	2	700		Primary		
Woodward Creek	WC					
Shannon, Ga.	3	1,200		Primary		
Brighton Mills		Textile	Sewage	Primary		
Silver Creek	Si	Tributary to Coosa at 284				
Lindale, Ga.	4	3,500	Sewage	Secondary		
Pepperell Mfg. Co.		Textile	Organic	None		
Pepperell Mill Village		Textile	Sewage	Secondary	Undet'd	Undet'd
Cedar Creek	Ce	Tributary to Coosa at 257				
Cedartown, Ga.	21	9,000		Secondary		
Cedartown Textile, Inc.		Textile				
Goodyear Mill # 1		Textile				
National Products Co.		Chemical				
Schoen Bros. Inc.		Chemical				
Sou. Agr. Chem. Co.		Chemical				
Little Cedar Creek	9					
Little Cedar Creek	LCe					
Cave Springs, Ga.	2	400		None		
Cave Springs School, Ga.	2	100		Primary		
Chatooga River	CR	Tributary to Coosa at 232				
LaFayette, Ga.	52	2,700		Intermed.		
LaFayette Cotton Mills		Textile				
Linwood Cotton Mills		Textile				
Walker Co. Cotton Mills						
Trion, Ga.	41	2,500		None		
Trion Mills		Textile				
Summerville, Ga.	34	700		Primary		
Montgom ry Knit Mills		Textile				
Summerville Mfg. Co.		Textile				
Racoon Creek	30					
Racoon Creek	Rc					
Berryton, Ga.	1					
Berryton Mills		Textile				
Terrapin Creek	Te	Tributary to Coosa at 219				
Nance Creek	18					
Mill Creek	18					

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Mill Creek	M							
Piedmont, Ala.	2	2,600	2,600	Primary	Unsat.	Sat.	Addition	Undet'd
Std. Coosa Thatcher Co.		Textile	Sewage	Primary	Unsat.	Sat.	Additions	Undet'd
Nance	N							
Branch 5	2							
Branch 5	Br 5							
Piedmont, Ala.	1	3,000	3,000	Primary	Unsat.	Sat.	Addition	Undet'd
Big Wills Creek	B	Tributary to Coosa at 172						
Branch 6	47							
Branch 7	7							
Black Creek	0.3							
Branch 6	Br 6							
Fort Payne, Ala	2	4,000	4,175	Secondary	Sat.	Sat.	None	
W. B. Davis & Son		Textile	Organic	None			Undet'd	Undet'd
Branch 7	Br 7							
Attala, Ala	2							
Lawrence Products Co.		Textile	Organic	None			Undet'd	Undet'd
Black Creek	Bc							
Gadsden, Ala.	2							
Republic Steel Corp.		Metal	Chemical	None			Undet'd	Undet'd
Branch 8	Br 8	Tributary to Coosa at 167						
Gadsden, Ala.	1							
Allis Chalmers Mfg. Co.		Metal	Sewage	Secondary	Sat.	Sat.	None	
Big Canoe Creek	BC	Tributary to Coosa at 155						
Branch 9	27							
Ashville, Ala.	16	250	250	Primary	Sat.	Sat.	None	

Branch 9	Br 9							
Springville, Ala.	7	350	350	Primary	Unsat.	Sat.	Undet'd	Undet'd
Ohatchee Creek	O	Tributary to Coosa at 143						
Tallahatchee Creek	4							
Tallahatchee Creek	Ta							
Spring Branch	18							
Spring Branch	Sb							
Jacksonville, Ala.	2	4,500	4,500	Primary	Unsat.	Sat.	Addition	Undet'd
Cane Creek	Ca	Tributary to Coosa at 141						
Fort McClellan, Ala.	19	Undet'd	Undet'd	Secondary	Sat.	Sat.	None	
Branch 10	16							
Branch 10	Br 10							
Blue Mountain, Ala.	4	575	575	Secondary	Sat.	Sat.	None	
Linen Thread Co.		Textile	Organic	None			New Plant	Undet'd
Dye Creek	Dy	Tributary to Coosa at 117						
Pell City	6	800	800	Primary	Unsat.	Sat.	Addition	Undet'd
Avondale Mills		Textile	Organic	None			Undet'd	Undet'd
Avondale Mill Village		Textile	Sewage	Primary	Undet'd	Undt'd	Undet'd	Undet'd
Choccolocco Creek	Ch	Tributary to Coosa at 115						
Snow Creek	31							
Anniston-Oxford, Ala.	30	32,000	33,400	None			New Plant Act.	Planning
Coldwater Creek	24							
Chehawhaw Creek	12							
Estaboga Creek	9							
Chehawhaw Creek	Che							
Kelly Creek	3							
Kelly Creek	Ke							
Talladega, Ala.	3	500	500	Secondary	Sat.	Sat.	None	
Snow Creek	Sn							
Anniston, Ala.	3							
Anniston Mfg. Co.		Textile	Organic	None			Undet'd	Undet'd
Coldwater Creek	Cwc							
Bynum, Ala.	4							
Anniston Ordinance # 2		Ordinance	Sewage	Secondary	Sat.	Sat.	None	
Estaboga Creek	Es							
Bynum, Ala.	9							
Anniston Ordinance # 1		Ordinance	Sewage	Secondary	Sat.	Sat.	None	
Talladega Creek	Td	Tributary to Coosa at 88						

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Bemiston, Ala.	20							
Bemiston Mill Village		Textile	Sewage	Primary	Unsat.	Undet'd	Addition	Undet'd
Isbell Creek	17							
Ordinance Staff Village	1	Ordinance	Sewage	Primary	Undet'd	Undt'd	None	
Isbell Creek	Is							
Talladega, Ala.	2	9,000	9,000	Secondary	Sat.	Sat.	None	
Wehadkee Mills		Textile	Organic	None			Undet'd	Undet'd
Tallassechatchee Creek	Tl	Tributary to Coosa at 87						
Eumahee	14							
Shirtee Creek	12							
Branch 11	4							
Childersburg, Ala.	2	3,500	3,500	Primary	Sat.	Sat.	None	
Eumahee Creek	E							
Sycamore, Ala.	1	1,200	1,200	Primary	Unsat.	Sat.	Undet'd	Undet'd
Shirtee Creek	S							
Sylacauga, Ala.	2	11,000	11,550	Secondary	Sat.	Sat.	None	
Avondale Mills		Textile	Organic	None			Undet'd	Undet'd
Branch 11	Br 11							
Bon Air, Ala.	6	400	400	Primary	Undet'd	Undt'd	Undet'd	Undet'd
Waxahatchee Creek	W	Tributary to Coosa at 56						
Town Branch	16							
Buxahatchee Creek	7							
Town Creek	To							
Columbiana, Ala.	2	1,150	1,150	Primary	Unsat.	Unsat.	Addition	Final Plans Apprv'd.

Buxahatchee Creek	Bx							
Calera, Ala.	9	750	750	Primary	Unsat.	Sat.	Addition	Undet'd
Walnut Creek	Wa	Tributary to Coosa at 42						
Clanton, Ala.	11	3,000	3,350	None			New Plant	Undet'd
Hatchett Creek	H	Tributary to Coosa at 41						
Socapatoy Creek	22							
Socapatoy Creek	So							
Baker Branch	11							
Baker Branch	Ba							
Goodwater, Ala.	1	650	650	None				
Mortar Creek	Mo	Tributary to Coosa at 3						
Draper Prison, Ala.	3	700	700	Secondary	Sat.	Unsat.	None	
TALLAPOOSA RIVER	T							
Branch 12	220							
Tallapoosa, Ga.	217	2,000		Primary	Sat.	Sat.		
American Thread Co.		Textile						
Tallapoosa Cooperage Co.		Wood						
Little Tallapoosa River	153							
Crooked Creek	143							
High Pine Creek	123							
Chatchospee Creek	107							
Hillabee Creek	89							
Elkahatchee Creek	82							
Sandy Creek	74							
Martin Dam, Ala.	63	75	75	Primary	Sat.	Sat.	None	
Sougahatchee Creek	58							
Yates Dam, Ala.	50	65	65	Secondary	Sat.	Sat.	None	
Tallassee, Ala.	50	2,700	2,700	None			Undet'd	Undet'd
Stone Creek	49							
Lewis Creek	48							
Uphapee Creek	43							
Calebee Creek	34							
Oakfuskee Creek	26							
Branch 21	3							
Branch 12	Br 12	Tributary to Tallapoosa at 220						

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Buchanan, Ga.	5							
Buchanan, Mfg. Co.		Textile						
Little Tallapoosa River	Lt	Tributary to Tallapoosa at 153						
Branch 13	71							
Carrollton, Ga.	60	6,500	None					
Carroll Mills		Textile						
Caroline Mills		Textile						
Lawler Hosiery Mills		Textile						
Mandeville Mills		Textile						
Maryon Hosiery Mills		Textile						
Oaklawn Creamery		Food						
Buck Creek	57							
Branch 13	Br 13							
Villa Rica, Ga. # 2	2	500		Intermed.				
Buck Creek	Bu							
Bremen, Ga.	12	4,800		Intermed.				
Cluett Peabody Co.		Textile						
Hubbard Co.-		Textile						
Sewell Mfg. Co.		Textile						
Crooked Creek	Cr	Tributary to Tallapoosa at 143						
Horsetrough Creek	Ht							
Horsetrough Creek	14							
Ashland, Ala.	4	100	100	Primary	Unsat.	Sat.	Addition Undet'd	
High Pine Creek	Hp	Tributary to Tallapoosa at 123						
Roanoke, Ala. # 1	15	1,500	1,500	None			New Plant Undet'd	
Roanoke, Ala. # 2	2	1,800	1,800	None			New Plant Undet'd	

Chatahospee Creek	Cp	Tributary to Tallapoosa at 107						
Mill Creek	12							
Mill Creek	Ml							
LaFayette, Ala.	5	300	300	Primary	Unsat.	Sat.	Addition	Undet'd
Branch 14	3							
Branch 14	Br 14							
LaFayette, Ala.	2							
LaFayette Mills		Textile	Sewage	None			Undet'd	Undet'd
Hillabee Creek	Hi	Tributary to Tallapoosa at 89						
Enitachope Creek	10							
Enitachope Creek	En							
Branch 15	15							
Branch 15	Br 15							
Ashland # 1	1	600	600	Primary	Unsat.	Sat.	Addition	Undet'd
Branch 16	Br 16							
Alexander City, Ala.	3							
Avondale Mills		Textile	Organic	None			Undet'd	Undet'd
Elkahatchee Creek	El	Tributary to Tallapoosa at 82						
Sugar Creek	3							
Sugar Creek	Su							
Alexander City, Ala.	3	4,000	4,350	Primary	Sat.	Sat.	None	
Russell Mfg. Co.		Textile	Organic	None			Undet'd	Undet'd
Sandy Creek	Sa	Tributary to Tallapoosa at 74						
South Fork	10							
North Fork	8							
South Fork	SFSa							
Camp Hill, Ala.	6	650	650	None			New Plant	Undet'd
North Fork	Nfsa							
Dadeville, Ala.	9	1,000	1,225	None			New Plant	Undet'd
Sougahatchee Creek	Sh	Tributary to Tallapoosa at 68						
Pepperell Branch	41							
Pepperell Branch	Pb							
Opelika, Ala.	5	5,225	5,675	Secondary	Sat.	Sat.	None	
Pepperell	4	Textile	Organic	(d)	Undet'd	Undt'd	Undetld	Act. Planning
Stone Creek	St	Tributary to Tallapoosa at 49						
East Tallassee, Ala.	1	150	150	Secondary	Sat.	Sat.	Undet'd	Undet'd
Tallassee Mill Village		Textile	Sewage	None			Undet'd	Undet'd
Lewis Creek	Le	Tributary to Tallapoosa at 48						

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Tallassee, Ala. # 2	1	150	150	Primary	Undt'd	Undt'd	Undet'd	Undet'd
Uphapee Creek	Up	Tributary to Tallapoosa 43						
Chewachlechatchee Creek	17							
Branch 17	13							
Branch 18	10							
Wolf Creek	7							
Mitchell Village, Ala.	5	200	200	Primary	Sat.	Unsat.	None	
Chewachleehatchee Creek	Cwh							
Sawacklahatchee Creek	5							
Sawacklahatchee Creek	Swh							
Wrights Mill Creek	13							
Parkerson Mill Creek	11							
Wright's Mill Creek	Wm							
Auburn, Ala. # 1	4	6,000	6,000	None			New Plant	Undet'd
Parkerson Mill Creek	Pm							
Auburn, Ala.	5	9,000	9,000	None			New Plant	Undet'd
Branch 17	Br 17							
Tuskegee, Ala. # 2	1	500	500	None			New Plant	Undet'd
Branch 18	Br 18							
Tuskegee Institute, Ala.	3	4,000	4,000	Primary	Unsat.	Sat.	Addition	Undet'd
Vet. Adm.Hospital, Ala.	2	3,000	3,000	Secondary	Unsat.	Sat.	Enlarge	Under Const.
Wolf Creek	Wo							
Branch 19	2							
Branch 19	Br 19							
Nostasulga, Ala.	2	120	120	Secondary	Sat.	Sat.	None	
Calebee Creek	Cal.	Tributary to Tallapoosa at 34						
Branch 20	15							
Branch 20	Br 20							

Tuskegee Institute, Ala. # 2		6	1,000	1,000	Primary	Unsat. Sat.	Addition Undet'd
Tuskegee, Ala, # 1		6	1,000	1,000	None		New Plant Undet'd
Oakfuskee Creek	Of		Tributary to Tallapoosa at 26				
Old Town Creek		9					
Old Town Creek	OT						
Union Springs, Ala.		21	3,000	3,000	Primary	Unsat. Unsat.	Replace Undet'd
Branch 21	Br 21		Tributary to Tallapoosa at 3				
Prison No. 4, Ala.		1	360	360	None		Undet'd Undet'd
Branch 22	Br 22		Trubutary to Alabama River at 304				
Kilby Prison-Gunter Field		1	8,500	8,500	None		Undet'd Undet'd
Autauga Creek	Au		Tributary to Alabama at 289				
Prattville, Ala.		3	3,900	3,900	None		New Plant Undet'd
Gurney Mfg. Co.			Textile	Organic	None		None
Catoma Creek	Ct		Tributary to Alabama at 286				
Montgomery, Ala. # 2		10	55,000	55,750	None		New Plant Act.Planning
Mulberry Creek	Mu		Tributary to Alabama at 243				
Middle Fork Mulberry Cr.		29					
Middle Fork Mulberry Creek	MfMu						
Branch 23		20					
Branch 23	Br 23						
Thorsby, Ala.		2	550	550	Primary	Undet'd Undt'd	None
Cahaba River	Ca		Tributary to Alabama at 201				
Trussville, Ala.		164	1,300	1,300	Secondary	Sat. Sat.	None
Little Cahaba River		136					
Buck Creek		119					
Shades Creek		98					
Little Cahaba River (B)		85					
Little Cahaba River	CAL		Tributary to Cahaba at 136				
Leeds		12	2,000	2,000	Secondary	Sat. Sat.	None
Buck Creek	Bc						
Siluria, Ala.		10					
Buck Creek Mills			Textile	Organic	Primary	Unsat. Sat.	Addition Undet'd
Shades Creek	SC		Tributary to Cahaba at 98				
Irondale, Ala.		44	1,300	1,300	Primary	Unsat. Unsat.	Addition Undet'd
Jefferson County		33	17,000	17,000	Primary	Unsat. Sat.	Addition Undet'd

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Little Cahaba River (B)	CaLB	Tributary to Cahaba at 85						
Shoal Creek	14							
Shoal Creek	She							
Montevallo, Ala.	7	1,000	1,000	None			New Plant	Act.Planning
Davis Creek	7							
Davis Creek	DA							
Alabama College	2	850	850	None			New Plant	Undet'd
Bogue Chitto Creek	Bo	Tributary to Alabama at 175						
Sand Creek	43							
Sand Creek	Sd							
Branch 24	1							
Branch 24	Br 24							
Marion, Ala.	1	2,000	2,000	None			New Plant	Under Const.
Pursley Creek	Pu	Tributary to Alabama at 125						
Branch 25	9							
Branch 25	Br 25							
Camden, Ala.	3	300	300	Primary	Unsat.	Sat.	New Plant	Undet'd
Limestone Creek	Li	Tributary to Alabama at 80						
Downer Creek	14							
Mill Creek	10							
Downer Creek	D							
Branch 26	2							
Branch 26	Br 26							
Monroeville, Ala. # 2	2	800	800	Primary	Unsat.	Sat.	Enlarge	Undet'd
Mill Creek	Mi							
Monroeville, Ala. # 1	2	1,060	1,325	Primary	Unsat.	Sat.	Enlarge	Undet'd

Lovetts Creek	Lov	Tributary to Alabama at 61				
Randons Creek	1					
Randons Creek	Ra					
Branch 27	10					
Branch 27	Br 27					
Frisco City, Ala.	1	575	575	Primary	Sat. Unsat.	None

* Includes incorporated or unincorporated municipalities; other legal bodies as sanitary districts, counties, towns, significant institutions, recreation centers or other population centers.

** Industries having separate outlets and discharging wastes directly to watercourses. The Georgia industries included in this table were taken from "Manufacturers of Georgia".

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